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In the Supreme Court of the United States

October Term, 1940.

No. 9.

THE SCHRIBER-SCHROTH COMPANY,
Petitioner,
vs.
THE CLEVELAND TRUST COMPANY,
CHRYSLER CORPORATION,
Respondents.

No. 10.

THE ABERDEEN MOTOR SUPPLY COMPANY,
Petitioner,
vs.
THE CLEVELAND TRUST COMPANY,
CHRYSLER CORPORATION,
Respondents.

No. 11.

THE F. R. ROWE SALES COMPANY,
Petitioner,
vs.
THE CLEVELAND TRUST COMPANY,
CHRYSLER CORPORATION,
Respondents.

RESPONDENT'S BRIEF.

A. C. Denison,
F. C. Ehlert,
Wm. C. McCoy,
Hoyos Fleming,
Counsel and Solicitors for Respondent.

The Werner Printing & Lithographing Co., Cleveland, Ohio

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RESPONDENT'S BRIEF.

The issue here has become, and now is, unimportant and moot, so far as the public interest is concerned.

We think we should make, based on the affidavit of William C. McCoy, printed in Appendix A hereof, as we do, and without fear of contradiction, the following representations which find no support in the original record

because the facts in the representations have occurred since the trial. We present them here because they relate to and nullify the reasons for granting certiorari in these causes;

Of the several devices charged to infringe, the Court of Appeals held that the piston Exhibit 1 alone infringed (Exhibit 1 is illustrated at P. B.* p. 15). This device has become obsolete since this suit was tried. Though it was made and used in tremendous quantities, it has "had its day," like the bow and arrow, the square rigged sailing ship, and the muzzle loading gun.

No automobile or internal combustion engine made in the Sixth, or any other Circuit, is using Exhibit 1 as original equipment. A few only of these Exhibit 1 pistons are now made and sold to replace original equipment. None of these are being made in the Sixth Circuit except a few made by respondent's licensees for replacement purposes. We understand that a few others are making them in the Ninth Circuit for replacement purposes. Even this limited production is waning and will continue to wane and terminate when and as the cars in which these pistons were originally installed go to the scrap pile. Much of this supplanting of Exhibit 1 has been, is, and will be, done by pistons of one of more of the types held not to infringe the Jardine patent (Exhibit 3-O, for example).

Hence, these causes are of no public interest. The public is no longer interested in what is done about Exhibit 1. On the other hand, these causes have developed into a private fight between the respondent, on the one hand, and the petitioners and their patron, on the other hand, for One Dollar ($1.00) per law suit or a grand total of Three Dollars ($3.00) for the three causes (R. pp. 106, 170 and 216).

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* In this brief we refer to Petitioners' Brief as P. B., to Supplement to Petitioners' Brief as S. P. B., and to Respondent's Brief as R. B. Chrysler Corporation was made a party plaintiff because of its interest in the Maynard patent, now not in suit.

The public is not interested or concerned about which of the contending parties is awarded the Three Dollars ($3.00). Even injunctive relief, if any is to be granted ultimately in view of what the parties say in the portions of their brief entitled Point III (P. B. pp. 57-59; R. B. pp. 86 to 89), retains a minimum of importance in view of this piston's present status.

Under the circumstances dismissal of the certioraris is justified under the practice in *Keller v. Adams-Campbell*, 264 U. S. 310; *Layne & Bowler v. Western*, 261 U. S. 37.

If, in these premises, the right to injunction against the making, using and selling of obsolete pistons, headed for the museum like many another important invention that served man in its turn and time, is of any importance as to the propriety of certiorari, then we suggest that this Court next consider the question of the right to injunctive relief discussed in Point III of each of the briefs of the parties and, if this Court agrees with petitioners that the respondent is not entitled to injunctive relief, then what possible interest can the public have in which of the litigants would get the Three Dollars ($3.00)? Certainly the time of this Court should not be consumed over a matter involving such a trifle.

Aluminum Company of America: On all occasions during this litigation, our adversaries have mentioned the name of the Aluminum Company of America, sometimes even going so far as to discuss questions concluded and abandoned by them in the lower Court in order to parade the name of the Aluminum Company in this litigation. In view thereof the Court of Appeals included in their opinion a footnote (108 Fed. (2) 114) which could have had no other purpose than to rebut any inference or conclusion that that Court was in any way swayed by these frequent and devious references to the Aluminum Company, the pending anti-trust litigation, or the current newspaper

comments against the Aluminum Company. Since we are under no obligations to temporize about this manifest effort to influence the issues in this case by these tactics (as perhaps was the Court of Appeals), we say we have no doubt about the purpose of these tactics, and in view thereof, we say emphatically that, as is true of all cases of this kind, the invalidating of the Jardine patent would be a distinct advantage to the Aluminum Company over the smaller companies, who are licensed under the Jardine patent. This is not only commonly known in general history in industry, but is consistent with the purposes of the pending litigation by the Department of Justice against the Aluminum Company. To our own knowledge in a number of cases small companies who, under patent protection, were successfully competing with larger companies, have not only lost their business, but have been extinguished, when the patents were invalidated or limited to impotency, and competition became open, so that, the large company could take full advantage of its largeness. One of the complaints against the Aluminum Company is that it possessed all of the advantages of any large company and, in addition, it possessed the advantage of being, if not the sole, at least the largest, producer of virgin aluminum, so that it could sell pistons, and what not, at cost and depend solely upon its profit on the raw material for its advantage. It results that not only is a conclusion that the validating of the Jardine patent would aid the Aluminum Company not justified by history, but such a conclusion is repulsed by the bases of the proceedings of the Department of Justice against the Aluminum Company. It follows that the conclusion which our adversaries solicit and which the Court of Appeals felt compelled to rebut, would be erroneous if accepted and that, in fact, just the contrary is the truth. The Aluminum Company could not make the Jardine piston (even if it were still marketable) except on paying a royalty in which all the Cleveland Trust Company beneficiaries share.

"Patent Pools": Frequent reference is also made by our adversaries to the plaintiff's ownership of a group of piston patents; often, by way of attempted derogation, the term "patent pool" is used. The plaintiff, as trustee, holds the title to certain patents, most of which are unimportant and many of which were purchased from the inventors who would otherwise have suffered total loss. These patents are held in the interest of certain individual inventors, certain relatively small companies and of the Aluminum Company of America, which owns a minority interest in the Trust Estate. The so-called "patent pool" was, as far as history in this country goes, first instituted to prevent the invention of the sewing machine by Elias Howe from causing bankruptcy and ruin, and to consummate the reward which was promised him under the patent laws, but which the Courts failed to consummate for him without the aid of the "pool." Since then these so-called "patent pools" have been organized and administered for the same purpose. The need exists today more than ever where the expense of litigation has been increased by such practices as moving the standard of invention around, apparently more or less at random, until it is beyond the purse of individual inventors to realize upon the patent grants which have been extended to them under the laws of Congress, and where the position of the standard of invention is so changed during the litigation that what promised to be a reward and a success at the beginning of the litigation turns out to be a penalty and a disaster in the end. It is true that in many cases the individual inventors must get in the same boat with those at whom people like our adversaries direct their disapproving darts.

It results that if the minority interests of the Aluminum Company of America in this patent property is thought to be improper, hard cases should not make poor law.

Moreover, if the "patent pool" is so objectionable and its presence makes out such a "hard case" as justifies the

making of bad law and ignoring the facts, as this Court is here asked to do, then Congress will, or would, have passed some of the many laws proposed to it to deal with these "patent pools." Since there have been many such proposed to Congress in recent years and none have been passed, it would seem that Congress has concluded that there is no need for a law directing such revolutionary measures as are here proposed that this Court take in order to deal with the dragon petitioners pretend to visualize in this cause.

"Sins of the Past": The issues here relate directly to, or depend upon, the question of invention as distinguished from mechanical skill, since the Jardine claimed combination is not in the prior art and the technical questions raised are such as have been resolved in favor of a meritorious invention under the authority of this and other Courts (*Smith v. Snow,* 294 U. S. 1, 14; *Keystone v. Adams,* 151 U. S. 139, 144, 145; *McClain v. Ortmayer,* 141 U. S. 419, 425). Since this Court, where both validity and infringement are in issue, has not held a patent valid and infringed in over twelve years,* the Courts of Appeals have assumed that the standards of invention have been raised by this Court and such Courts of Appeals are now in confusion as to where that standard now is or ultimately will be rested, since it has been dislodged from its former anchorage. In the instant cause, for example, the Court of Appeals had occasion to comment on this in its second opinion (108 Fed. (2) 112) and to note the same kind of comment by the Court of Appeals in the Second Circuit at 77 Fed. (2) 274, 276. In so doing the Court of Appeals below com-

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* The patent in *Smith vs. Snow,* 294 U. S. 1 and in *Waxham vs. Smith,* 294 U. S. 20, was held invalid in *Smith vs. Hall,* 301, U. S. 216. *U. S. vs. Esnault,* 303 U. S. 26 was from the Court of Claims and this Court noted that the review of this Court was precluded and restricted by an Act of Congress.

mented that it held to the view that its opinion in this case, now under review, conformed to the present standards of invention as set by this Court and was paralleled by a co-extensive conclusion of the Court of Appeals in the Second Circuit in the cited case. In the Third Circuit the Court of Appeals in the recent decision of *Armstrong v. United Cork* (107 Fed. (2) 36) noted this change of standards and, speaking through Judge Clark, likened the situation to the moving back of the target in artillery practice. After citing many recent decisions of this Court on that subject, and in attempting to apply that Court's interpretation of the present locus of this standard of invention, as set by this Court, Judge Clark felt called upon to refer to the administration of the patent law prior to the change as "the sins of the past" (the exact words are: "We, therefore, express to them" (i.e., counsel and clients) "our regret for the sins of the past") (107 Fed. (2) 37). Since the present locus of this standard of invention is at the threshold of and determinative of this case, it behooves us to state in the beginning of this brief, (A) what were these "sins of the past" and, (B) the results, or "wages" of those "sins of the past" upon the laudable purpose of promoting invention, science and human progress in general which was the purpose of the Constitution, the patent laws and the result of the administration thereof in the "past."

(A) What was the practice followed in administering the patent law in the past?

In the administration of the patent law by this and the other patent Courts in the "past," the "standard of invention" was rooted in and resolved on the evidence upon three questions, the first of which was (a) the history of the invention in the industry, the second was (b) the achievement of the invention, and the third (c) was the presumption of validity which attaches to the public grant.

All collateral matters such as judicial hunches, simplicity, "the hindsight of wiseacres," were condemned and eschewed in weighing the question of invention.

(a) The history of an invention, sometimes referred to as evidence, criteria, or symptoms of invention, included such evidence as related to an urgent need or want long existing, a problem demanding solution, prior effort and failure of others skilled in the art to supply the need and solve the problem, public adoption, public acquiescence and commercial success of the invention under such circumstances as to warrant the conclusion that success was due to the invention, persistent infringement in the face of litigation, long standing of the invention as a solution, simplicity, and substantial duplication by the infringer with no further departure than substitution of equivalents. The use of this evidence was generally predicated upon the proposition that it constitutes the tribute and the testimony of the industry to which the invention relates regarding its merit and its title to recognition as an invention. Many of the Courts had no hesitancy in expressing themselves as saying that such a collective tribute of the industry was a safer guide on the question than was what moved in the bosom of the Court, too often insufficiently informed regarding the mechanical and scientific principles involved in the case. The decisions of this Court in which this healthy rule has been followed are ancient, intermediate and current, as exemplified by the following excerpts from decisions of this Court at various times.

In *Expanded Metal v. Bradford,* 214 U. S. 366, 381, this Court in dealing with prior symptoms of invention said:

> "It may be safely said that if those skilled in the mechanical arts are working in a given field, and have failed, after repeated efforts, to discover a certain new and useful improvement, that he who first makes the discovery has done more than make the obvious im-

provement which would suggest itself to a mechanic skilled in the art, and is entitled to protection as an inventor."

In *Temco v. Apco*, 275 U. S. 319, 324, this Court in dealing with after symptoms said:

"The district judge in Ohio in the *K-W Ignition Co.* case was affected in his decision that the Thompson patent involved invention, by the way in which the public eagerly took it and its marked success, and so, indeed, was the Circuit Court of Appeals of the Sixth Circuit. So are we."

The dominance of history over "hindsight" was expressed generally in *N. Y. Trust v. Eisner*, 256 U. S. 345, 349, thus:

"a page of history is worth a volume of logic."

Thus, in *Paramount v. Tri-Ergon*, 294 U. S. 464, the Court said (p. 474):

"Where the method or device satisfies an old and recognized want, invention is to be inferred, rather than the exercise of mechanical skill. For mere skill of the art would normally have been called into action by the generally known want. See *Loom Co. v. Higgins*, 105 U. S. 580, 591; *Krementz v. Cottle Co.*, 148 U. S. 556, 560; *Hobbs v. Beach*, 180 U. S. 383, 392; *Carnegie Steel Co. v. Cambria Iron Co.*, 185 U. S. 403, 429, 430; *Expanded Metal Co. v. Bradford*, 214 U. S. 366, 381."

In *Smith v. Snow*, 294 U. S. 1, the Court said (p. 14):

"If the matter were doubtful, it is plain from what has been said that the character of the patent and its commercial and practical success are such as to entitle the inventor to broad claims and to a liberal construction of those which he has made. *Moreley Machine Co. v. Lancaster*, 129 U. S. 263, 273-277; *Eibel Co. v. Paper Co.*, 261 U. S. 45, 63; *Winans v. Denmead, supra*, 341. In such circumstances, if the claim were fairly susceptible of two constructions, that should be adopted which will secure to the patentee his actual invention,

rather than to adopt a construction fatal to the grant, *Keystone Manufacturing Co. v. Adams*, 151 U. S. 139, 144, 145; *McClain v. Ortmayer*, 141 U. S. 419, 425."

All of this history and all of these evidences, criteria or symptoms of invention have been found to be present in the instant case by each of the Courts below (Master's Report, R. p. 1182, affirmed by the District Court). The Court of Appeals summarized the situation in its second opinion in this case as follows (108 Fed. (2) p. 112):

> "In the conviction that the long search for a solution of the aluminum piston problem by engineers of great ability, their repeated failures, and the ultimate success of the Aluminum Company's commercial device point with persuasiveness to the fact that somewhere in the search one, with the spark of genius denied the skilled mechanic, contributed to the art the thought that brought achievement out of failure, we reconsider the Jardine patent,"

and (108 Fed. (2) 111):

> "we were greatly impressed by the story disclosed by the record of the long search and sustained effort on the part of exceptionally competent automotive engineers to completely solve the problem of a successful aluminum piston operating freely with minute clearances in an iron cylinder. There had been advances, 'foreshadowing,' perhaps, that solution would not always defy inventive genius, though on the whole the aluminum piston as heretofore noted had received a 'black eye' in the industry."

A more lengthy statement in the first opinion of the Court of Appeals (92 Fed. (2) 334, 335; S. P. B. pp. 6-8) culminated in the following:

> "Long recognition of an existing problem in any art, and the advantages to accrue to an industry from its solution, coupled with repeated failures to find solution, has ever been considered as highly persuasive of invention when success is finally attained. Sometimes achievement is revolutionary, an abandonment of all

previous approaches, and the charting of a new way to the goal. More often the inventor begins where others leave off, and perceives the vital forward step to which predecessors had been blind. Even then success may not be fully recognized until the world gives acclaim.

"The present record is conclusive of the long unsuccessful search for a light weight piston sufficiently durable to obviate the well-known disadvantages of the iron trunk piston in high speed engines. There was much research and experimentation by those most highly skilled, including the engineers of the Aluminum Company, Colonel Vincent of the Packard Motor Car Company, one of the designers of the Liberty engine, and the engineering staff of the Franklin Automobile Company, under the direction of the defendants' expert Stellman, its Chief Engineer."

* * * * *

"It is, of course, axiomatic that commercial success is not of itself conclusive upon the question of novelty or invention, and where such success is fairly attributable to other causes, such as the reputation of the manufacturer, his extensive advertising and superior salesmanship, it will be wanting in persuasiveness. But where no alternative inferences are to be drawn, commercial success is highly indicative of invention. This is so in the usual case where the test of success is acceptance by the public. But it must be here noted if not elsewhere observed, that where success follows acceptance by experts rather than by those unskilled, it is of far greater tribute to the ingenuity of the inventor. It is clearly demonstrated upon this record, if indeed it is not within the field of general knowledge, that the automotive industry i acceptance of new devices upon which success of highly complicated and delicate machinery in the hands of inexpert users must depend, exercises the greatest caution, and things new, whatever their theoretical virtue, will not be considered until they have been subjected to the most rigorous practical tests for efficiency and durability. This must be so when failure of one year's product may bring tremendous losses or complete disaster."

(b) Achievement: The modern inventor stands at a disadvantage as against the inventor of the period of these "sins of the past" due to the moving of the boundaries of the knowledge of science and invention ever and ever further beyond the ken of the public, including even the professional classes. Inventions have been both more difficult to understand and less spectacular. For example, as is well known, the inventions by Alexander Graham Bell and Thomas A. Edison were simple as compared with such inventions as are covered by the Jardine patent. The problems were simpler and the means of solving them were simple, but they were more spectacular in that the public in general could understand the achievement, if not the nature, of the solution. Today such involved problems as that which confronted Jardine are solved and the solution is put into use without the public knowing anything about it or being able to understand it, if it were brought to their attention. The consequences of such inventions come quietly and more or less unobserved to the public. The new piston causes the engine to run smoother, to last longer, to consume less fuel, to shake off many of its ills, to need less attention and repair, to operate with greater efficiency, and constitutes the basis of new designs of engines of higher speeds, etc., all of which result from the original achievement of Jardine's invention (R. pp. 466, 467, 1069 and 1070).

The Courts below all concur in the difficulty of the problem which confronted Jardine, its solution and its achievement. These things are catalogued and discussed by the Court of Appeals in the following excerpts from its opinions.

At 92 Fed. (2) 332:

> "Cylinders were, and generally still are, cast of iron, and prior to the period we are here considering pistons were likewise so cast. The disadvantages in this organization were early recognized. Since iron is

a poor conductor of heat, the particles of carbon that would form on the piston head would become overheated and cause premature explosion in the combustion chamber. Iron is also heavy, and with the great acceleration of piston reciprocation, due to the ever increasing demand for speed, the industry began to cast about for expedients to lighten the pistons. *There were numerous efforts and failures* in this respect with the conventional iron trunk piston. Lighter metals were considered, but since strength and durability to withstand the great force of rapid explosions upon the piston head and the powerful thrust imparted to its bearing faces by the power stroke of the piston as it imparted energy to the crank shaft were prerequisites, the art was limited to metal that was both strong and durable. It turned, therefore, quite naturally and inevitably, to aluminum. *A new and for a long time seemingly insuperable problem* at once confronted the automotive engineers, due to the fact that the coefficient of expansion differs greatly in the two metals, and that under heat aluminum will expand much more rapidly than iron. Since the desirable clearance is minute, approximating one one-thousandth of an inch, it was at once clear that an aluminum piston, installed when cold with required clearance in an iron cylinder, would, when heated by operation, seize, and that a piston with clearance sufficient to avoid seizing would waste power, pump oil, cause undesirable noises and lack durability.

"Ingenious, numerous, and varied were the expedients resorted to in an effort to achieve the clearly recognized advantages of aluminum pistons, while at the same time avoiding troublesome results, and equally numerous were the failures, by reason of which a prejudice had developed in th industry against them, and it was said they had had a 'black eye.'" (Emphasis ours throughout unless otherwise indicated.)

At 108 Fed. (2) 113:

"Jardine is also the first to refer specifically to an 'aluminum alloy piston,' and he states that one embodying his invention 'can be fitted to the engine cylinder with a very small clearance, and that compensa-

tion for the relatively large thermal expansion of the guide section of the piston is provided by the displacement of the guide segments which results from the reaction force of the cylinder wall on the outer faces of the guides.' "

(c) Presumptions of Validity and the Presence of Invention: This rule of law was stated recently by Mr. Justice Hughes in the case of *Mumm v. Decker,* 301 U. S. 168, 171, as follows:

> "The issue of the patent is enough to show, until the contrary appears, that all the conditions under which a discovery is patentable in accordance with the statutes have been met. Hence, the burden of proving want of novelty is upon him who avers it. *Walker on Patents,* Sec. 116. Not only is the burden to make good this defense upon the party setting it up, *but his burden is a heavy one, as it has been held that 'every reasonable doubt should be resolved against him.'* Id., *Cantrell v. Wallick, supra; Coffin v. Ogden,* 18 Wall. 120, 124; *Barbed Wire Patent,* 143 U. S. 275, 284, 285; *Adamson v. Gilliland,* 242 U. S. 350, 353."

The same rule is stated by Mr. Justice Cardozo in *Radio v. Radio,* 293 U. S. 1, 6.

As indicated by the citations by Mr. Chief Justice Hughes, the rule is of ancient and frequent application.

In the instant case the patent and claims were issued and granted by the Patent Office after a long and careful prosecution which included several Patent Office interferences, during which the prosecution proceeded *inter parties* (*Gordon v. Walcott,* 32 Fed. (2) 55 (C. C. A. 6) (See the list at page 7 of petitioners' brief), including Long, Hartog and Gulick. During the prosecution the art relied upon here was cited and considered by the Patent Office in *inter partes* proceedings. Thus the claims in suit were allowed by the Patent Office as distinguishing from the very art petitioners rely upon here. By all authority the presump-

tion of validity arising from the grant as stated in *Mumm v. Decker, supra,* is greatly reinforced and strengthened by the much more careful consideration given the case in the Patent Office under these circumstances (*Dean v. Killian,* 106 Fed. (2) 316 (C. C. A. 8) and *Gairing v. Eclipse,* 48 Fed. (2) 73 (C. C. A. 6)).

(B) What was the result on progress of peoples, science and invention under these rules, promulgated and applied by this and other patent Courts before it was discovered that they were "the sins of the past"; succinctly what was the "wages" of "the sins of the past."

In the report of the Monopoly Investigating Committee of the Congress of the United States there appears the following excerpts relating to the American patent system and its administration in the past:

"1. There seems to be a general agreement by these witnesses, as well as by those who previously testified at the Department of Justice hearing some weeks ago, *that inventors and business still need the protection and stimulation of patents.*"

* * * * *

"*the patent system has been of inestimable benefit to the country in promoting industrial and scientific development, and may be regarded as one of the principal causes of American industrial supremacy,*"

* * * * *

"(6) The fact that patents are keystones in many very important industries has been brought home to us with great emphasis. I doubt whether I had realized their significance as a primary force in the operations of the economic system."

* * * * *

"(7) *There was practically unanimous agreement among the witnesses that Congress, by the enactment of the patent law, has given this country a system far superior to that which exists in any other country.*"

The following is a statement by Mr. Justice Roberts, speaking for this Court in *U. S. v. Dubilier*, 289 U. S. 178, 186:

> "* * * An inventor deprives the public of nothing which it enjoyed before his discovery, but gives something of value to the community by adding to the sum of human knowledge." (Citing cases by the Supreme Court.)

In the recent work entitled "Twilight of Man" by the great anthropologist, Professor Hooton of Harvard University, the following tributes are paid to invention and its importance which, as all admit, has been greatly encouraged and increased by the administration of the patent law during the period when liberality was shown to the inventor (p. 36):

> "There followed the one stupendous triumph of animal genius beside which all subsequent human creations pale into insignificance—*the invention of tools.*"

(pp. 24 and 25):

> "It is almost treasonable to argue in this democratic society that social, material, and intellectual progress has never been a communal achievement—a sort of immaculate conception of the group mind—but always the result of the effort of the gifted individual."
>
> * * * * *
>
> "Civilization has advanced in my opinion, not because of any improvement of mental quality in the masses within the last ten thousand years, but rather because the realization of the material advantages to be gained from the toleration of genius has slowly percolated into the torpid minds of the majority of our species."

Francis Bacon gave the weight of his opinion to views somewhat similar to the foregoing. The following is a translation of one of his Latin paragraphs:

> "The introduction of great inventions appears one of the most distinguished of human actions, and the

ancients so considered it for they assigned divine honors to the authors of inventions, but only heroic honors to those who displayed civil merit such as the founders of cities and empires, legislators, the deliverers of their country from lasting misfortunes, the quellers of tyrants, and the like. And if any one rightly compare them, he will find the judgment of antiquity to be correct; for the benefits derived from inventions may extend to mankind in general, but civil benefits to particular lands alone; the latter, moreover, last but for a time, the former forever. Civil reformation seldom is carried on without violence and confusion, while inventions are a blessing and a benefit without injuring or afflicting any."

On the subject Abraham Lincoln said:

"*Next came the patent laws.* These began in England in 1624, and in this country with the adoption of our Constitution. Before then any man (might) instantly use what another man had invented, so that the inventor had no special advantage from his invention. The patent system changed this, secured to the inventor for a limited time exclusive use of his inventions, and thereby added the fuel of interest to the fire of genius in the discovery and production of new and useful things."

Though the first patent laws began in 1624 the admintration of them was a failure up until roughly about 1824, hence little progress was made until after the beginning of the Nineteenth Century. The laws were good, but the administration of them between 1624 and 1824 did not stop invention stealing and the inventor would not spend his substance and his time producing property to be stolen at will and at random any more than anybody else. He did not, and invention from 1624 to 1824 was sparse and scattered. Only when the stealing of Eli Whitney's cotton gin invention by Southern planters incited the public to demand a fair administration of the patent law was it that fair administration was instituted.

Any careful student of history appreciates that the administration of the American patent law characterized by Judge Clark as "sins of the past" began a little over one hundred years ago and continued up until roughly twelve years ago. During that period, to common knowledge, progress and the science of invention and human advancement generally so outstripped all other periods as to almost, if not entirely, surpass all previous achievements towards human betterment and progress. Although the public is cognizant of only the spectacular inventions made during that period, much towards this progress was contributed by the less spectacular and often less important inventions; for example, underneath the invention of the steam boat, telegraph, locomotive, sewing machine, electric light, the phonograph, the telephone, the automobile, the radio and the aeroplane were a whole host of these less spectacular, but perhaps equally important, inventions such as nail-making machines, glass-molding machines, well-boring machines, etc., including metallurgical, chemical and electrical processes too involved to be understood by the public, but the achievements of which were as necessary to progress as the spectacular inventions.

Conclusion on the Subject of the "Sins of the Past": We are, therefore, confronted here in 1940 with the proposition of whether we are to adhere to, or rather not depart substantially from, a policy, incorrectly characterized as the "sins of the past," which was initiated a little over one hundred years ago in the United States and has been partly responsible for the initiation and continuation of the most brilliant period in human history. A continuation of a policy which sets the standard of invention so high as to compel a decision against the patentee in almost every case, can have no other influence than a disastrous one upon the encouragement of invention, and can have no other effect than the reverse of the effect which initiated

the great period of invention and progress over one hundred years ago and continued it; it can have no other effect than in the end to destroy inventive effort. We are well aware that a movement of such magnitude and importance will be carried by inertia forward for a certain number of years even after those influences which initiated and fostered it have been withdrawn. Already this policy has had the effect of reducing the number of, if not eliminating, individual free-lance inventors of the type of Edison and Bell. Already it has had the effect of greatly reducing the number of smaller corporations which started up and prospered during their incubation period under patent protection. Already it has had the effect of driving inventive work to the research laboratories of the big companies who can depend for protection upon their bigness rather than upon favorable Court holdings on their patents. It is apparent that these big companies will not long continue to spend their time and money in pioneering and developing inventions if they are at once dedicated to anyone and everyone who chooses to copy them. Manifestly, they will not continue long because they cannot. Pioneering in inventing is expensive and one who engages in it cannot compete with one who does not, but nevertheless gets all the benefits of it, just the same as happened in the Seventeenth and Eighteenth Centuries.

In view of these things it is our position that the administration of the patent law during the past, to which Judge Clark referred, was not "sinful," but wise and virtuous, and ought to be continued.

That the invention of Jardine responds to all of the tests of invention applied during that period is concurred in by all of the Courts below. The only difference on the subject of invention in the Courts below is the confusion which exists today over where the standard of invention is to be planted, now that it is conceded that it has been dislodged from its former base by the recent decisions of this

Court, to which we refer and to which the Courts of Appeals in the Second, the Third and the Sixth Circuits have referred in the decisions which we have cited.

Certain Fundamental and Salient Rules of Patent Law Ought to be Preserved, no matter what former rules or standards have been destroyed or modified in the target moving which has been so great as to suggest the conclusion of Judge Clark. Such rules, for example, are:

(1) Success will not be invalidated or destroyed by failure.

(2) A successful inventor will not be crucified by a merely careless word or phrase.

(3) Hindsight of the wiseacre will not prevail over the evidence of history and achievement.

(4) Comparison of inventions is to be made by how they perform and what they do and not through words and phrases.

(5) Hard cases will not make bad law.

(6) One part of a contract and one part of a patent, which is a contract, may be construed in the light of other parts thereof and hence a patent claim may be construed in the light of the specification.

Even if one regarded the past administration of the patent law as "sinful," these more important rules ought to be preserved since use will be found for them in a future and less critical age.

Adherence to these rules is sufficient to affirm the Court of Appeals no matter where one plants the standard of invention.

No Prior Art Piston Could Operate at the Essential Minute Clearance. The Long piston was tested in the laboratory at .002" and failed; it "set up" and "seized" in the cylinder (R. pp. 666 and 1438); the clearance had to be more than doubled to .005" (R. pp. 458, 1438, 1587). At such

clearance it added collapse and breakage (R. pp. 939 and 380) to the many evils of pistons which gave the aluminum piston the "black eye" (R. pp. 461, 469, 939; 108 Fed. (2) 114).

Ricardo failed at a clearance between .0035" and "maybe nearly twice that" (R. pp. 1082 and 1181); it never succeeded at any clearance (R. pp. 185 and 186). Petitioners invite the human eye to fool a man into thinking Ricardo looks like Jardine in an effort to overcome the evidence of their operative differences; one must have the ability to understand beyond what the eye sees to appreciate why one was thus a failure and the other was a success. The patent law was, and should be, administered on what the brain understands and not on what the eye sees (*Machine Co. v. Murphy*, 97 U. S. 120, 125).

Franquist was not used,—at least on this record; it would have required a clearance much greater than .002" —at least as much as a trunk type piston (.008") (R. p. 546).

Schmiedeknecht, Hartog and Pomeroy were never used; nobody ever claimed they could operate at .002" clearance; the evidence showing that better pistons, like Long, could not, is conclusive that they could not.

Hartog is so far afield it was supposed to operate at .005" *larger* than the bore of the cylinder (R. p. 1800); of course, it could not. No piston could.

Schmiedeknecht, being a trunk type piston, would require .008" (R. p. 546).

Therefore, at the very threshold of this case, and without going further into it, it is manifest that to invalidate Jardine is to destroy his success on the failures of others.

No Prior Art Device Supports and Divides Its Parts to Permit Deformation of Certain Parts Without Interfering With the Essential Functions of the Parts. Jardine's mode of operation is briefed in the Jardine patent as follows (R. p. 1295, lines 21 to 28):

"I have found that these difficulties can be overcome by constructing a piston with its skirt or guide portion supported and slotted or divided in a manner to permit deformation and deflection of parts thereof *without interfering with the performance of the essential functions of the respective parts.*"

Throughout petitioners' brief and, indeed, throughout most of the consideration of the machines and devices involved in patent cases, presentation and consideration are localized to particular parts or particular functions. That, of course, is the easiest and laziest way to do it. However, problems are much more involved often, as here, involving not only the introduction of new operations and the performance of new functions, but at the same time the preservation of old performances and old functions. In other words, it would have served no purpose to have invented a piston which would have preserved the necessary clearance of .002" unless the original properties of the piston were preserved. Among these properties were ruggedness and durability, essentials which were necessarily affected, if not destroyed, by the slitting of the piston and the weakening of the webs so that they would be flexible enough to bend before the piston stuck. To look at a piston and say it is split, and therefore solves the problem, is the grossest of errors, for the piston had to be split in such a way as to retain durability and ruggedness, and yet the lazy mind will readily jump to the conclusion that the problem involved nothing more than splitting a piston to make it yieldable. Only the diligent mind can see that the splitting had to be done in such a way that the other essential functions, like durability and ruggedness, were preserved. **Hence Jardine has not only split or divided his parts, but he supported them in such a way as to realize the necessary yielding or bending and preserve all the other functions of the piston, including ruggedness and durability. In other words, he split and relieved the piston as and where it would provide the bending without**

breaking and relieving it where and how it would not destroy or impair the ruggedness and the durability.

Long, on the other hand, split his piston skirt in six different places. This destroyed the ruggedness and the durability of the piston, so he had to make the webs so rugged that they would not yield before the piston stuck when it was tried at the required .002″ clearance. Hence we find in his specification the description of a stiff web and find his piston used at double the required clearance.

Franquist recognized that preservation of ruggedness and durability were essentials and, in an effort to preserve these, failed to make his piston flexible enough; he didn't know how to do the latter and preserve the former.

Hartog threw ruggedness and durability to the winds, and made his piston very flexible, so much so that he thought he could maintain a spring contact between the piston and the cylinder without seizure. It is manifest that Franquist was never used because he was not flexible enough and Hartog was never used because he was not rugged and durable enough.

The same situation existed with respect to Ricardo and Pomeroy. Ricardo preserved ruggedness and durability at the sacrifice of flexibility, and Pomeroy did the reverse. Neither was ever adopted because the one was too stiff and the other was too flimsy.

Schmiedeknecht was too stiff, as was the trunk type of piston.

From this it is apparent that the problem was not solved by merely splitting this piston or that piston, or by merely building up pistons with splits in them. The problem was not solved by merely providing a flexible web in any piston, or by building up a piston with flexible webs; it is only solved by supporting such webs and other parts together and splitting and relieving in the proper places some of the parts so as to realize the yielding which would take place before the piston stuck, without interfering with such essential functions as ruggedness and durability.

These are the things which Jardine did which no prior art device did, and one who seeks the truth about the situation here is only deceived by localizing the consideration to some one feature like the web and its flexibility and skating over the balance, as petitioners do in their brief.

The specification of the Jardine patent is both meticulous and ample in this description, and the record fully supports him with evidence by those who were familiar with the operation of the Jardine patent and its solution of the aluminum piston problem.

It is no answer to this to quote what has been said about Gulick upon the theory that Gulick employed flexible webs because the parties here are compelled by the former decision of this Court to consider the Gulick patent as having rigid webs, until after Jardine's filing date as the Court of Appeals said it was compelled to do, as we assume the Court will consider itself compelled to do to avoid the inconsistency of holding webs rigid in one case and flexible in another.

No Prior Art Device Discloses Flexible Web or Web Flexibility: Jardine First Disclosed These Features.* Since it has been determined as a part of the law of this case that the flexible web or web flexibility is an essential feature and element of the combination, and since none of the prior art discloses a flexible web or web flexibility, none of it is applicable for anticipation, limitation, or negativing of novelty of the Jardine patent which does disclose a flexible web. By a long line of authority in this Court the rules regarding sufficiency of disclosure of a patent in suit apply equally to the prior art (*Cawood Patent*, 94 U. S. 695, 704; *Seymour v. Osborne*, 11 Wall. 516; *Downton v. Yeager*, 108 U. S. 466; *Eames v. Andrews*, 122 U. S. 40, 66). The rule is so old and well established that it is found as textbook law

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* Again excluding Gulick, under compulsion of this Court's decision.

in the earliest textbooks on patent law. For example, Robinson states it with much authority to support it. From among these we quote the following (p. 453):

> **"That the publication must describe the invention as fully as does the patent to which it is offered as a bar,** see *New Process v. Koch*, 21 Fed. 580; *Downton v. Yeager Milling*, 108 U. S. 466 and *Hills v. Evans*, 6 L. T. n. s. 90."

Some of the prior art discloses no webs at all and of those that show and speak upon the subject, Long provides for rigid webs only.

Pomeroy did not provide flexible webs; he provided webs which yielded by foreshortening and lengthening along their horizontal axes in order to maintain the skirt sections parallel. His webs could not flex because they were tied together at their ends.

Hartog's skirt section was continued to the boss and wound up and out; it is doubtful if this could be called flexing, and it is immaterial if it could, because Hartog did not undertake to provide a piston to solve the aluminum piston problem. His piston could not maintain a clearance—all it could do was to eliminate the clearance. Under such an arrangement an aluminum piston would seize almost instantly in the cylinder.

Recognizing that nothing in the prior art discloses flexible webs or web flexibility, petitioners ask the Court to read this feature into certain prior art patents on the strength of testimony given at the trial (see bottom of page 11 and top of page 12 of petitioners' brief, for example). This Court, however, rules in its first opinion in this litigation that evidence of experts given at the trial could not supply lack of description of the flexibility of the webs in patent specifications (305 U. S. 47). So that unless this Court chooses to modify the long established rule that sufficiency of disclosure for a patent in suit and for the prior art are the same, set forth in the authorities we have cited *supra*, the insufficiency of the disclosure of the prior art

cannot be overcome by *ex post facto* evidence. To change this long established rule would create ludicrous situations. For example, in this case the Court would have to say that the webs of Gulick and Maynard were not flexible when their disclosures were read as patents in suit, but were flexible when read as prior art—a proposition untenable in law and ridiculous in common sense.

To Invalidate or Negative a Success on a Failure is abortive of the intent of the patent law and mournful in any branch of human endeavor.

Every prior art device relied upon by our adversaries was a prior effort and failure to solve the aluminum piston problem; every one of them failed to meet the desiderata; every one was a failure where Jardine was a success.*

The problem which was presented to Jardine for solution and the requirements which he had to meet are well stated by the Court of Appeals at 92 Fed. (2) 331 and 332.

It is important to remember that he was required to produce a piston in which there was to be, and to be roughly no more than, one-thousandth of an inch clearance between the piston and the cylinder, as illustrated in Fig. B on the page opposite hereto. The piston was to be of aluminum and the cylinder of iron, the two metals expanding and contracting at different rates, and yet the piston must maintain no more than this thousandth of an inch clearance on each side. If less, the piston would seize in the cylinder and, if more, it would slap and pass oil upward into the cylinder and gases downward into the crank case. In addition the piston had to be rugged and durable, to last for many thousands of miles, through rough handling and severe usage.

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*On this record Gulick presented no more than a stiff webbed piston since his web piston was never made by him and his only disclosure was that of the Gulick patent which, as this Court held, could be considered to be a disclosure only of a rigid webbed piston.

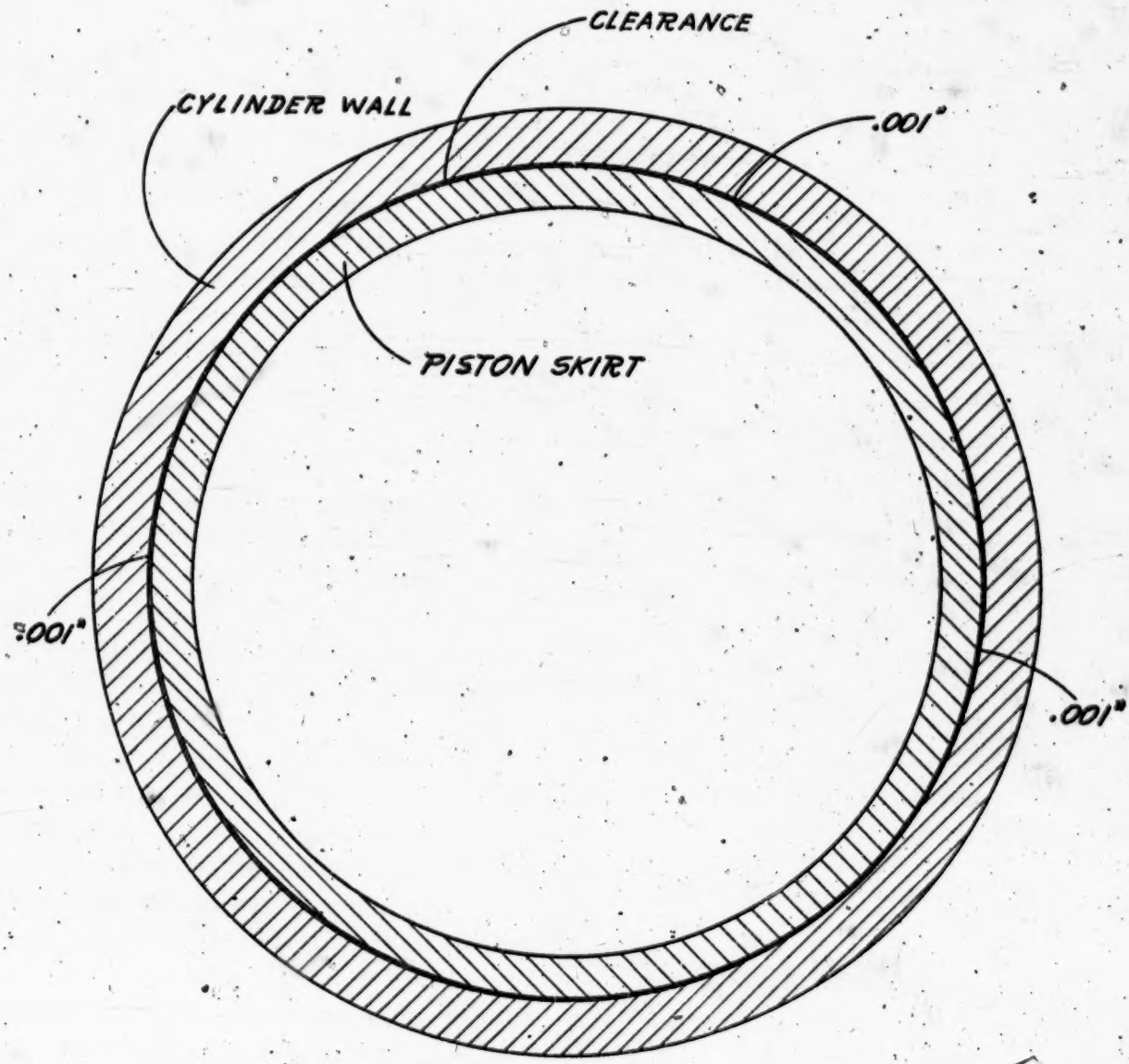


FIG. B.

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There is not a scintilla of evidence anywhere in this Record supporting a contention that any of the prior art devices could operate at this narrow clearance. For that reason alone all of them failed to solve the aluminum piston problem. It does not matter that some of them may have had flexible webs, though none did. It does not matter that some of them are split. It does not matter that the patents on some of them were owned by the plaintiff and licenses were granted under them. It does not matter how much some of them may have looked to the human eye like the Jardine piston. None of them was capable of operating at the required one-thousandths inch clearance. The burden was on the defendant to prove beyond a reasonable doubt that each of these prior art devices was capable of operating at the required small clearance (*Coffin v. Ogden*, 18 Wall. 120; *Mumm vs. Decker*, 301 U. S. 168). In most cases the defendants sought to skate over this proposition and avoid their burden by not offering any proof as to the clearance. The plaintiff, nevertheless, adduced proof showing that in all cases where any of these prior art devices were used, or their use was contemplated, the clearance was much greater than the one-thousandths inch which was a *sine quo non* of the solution of the problem.

"Smartness" of Petitioners' Brief (the old-fashioned term for this was "half-truths"): Petitioners' brief is replete with these "smart" statements which, if not corrected, would mislead, though we assume that they were not designed to mislead. Some of these are as follows:

(a) Jardine described flexible webs; Long did not: At page 5 it is said that the Long patent did not describe "flexible webs." The whole truth is that it described no other webs than those that are rigid in use. At the same page it is said that the Jardine claims "do not mention flexible webs." The whole truth is that the Jardine claims recite webs, and the only webs described by the specification are

"flexible webs." Since the only webs which the patentee could claim under the decision of this Court in this litigation, now the law of this litigation, is the webs he described in his specification, the webs in the Jardine claims must be considered as being flexible webs and no other webs, or this Court will be the first to depart from its former ruling.

(b) Court of Appeals on Long: On the same page it is said that the respondent's expert conceded that the Long commercial pistons had laterally flexible webs which the Court of Appeals held ineffective because the flexible capacity of these webs was not then known or understood. While such holding is supported in the rules of this Court (*Gayler v. Wilder,* 51 U. S. 497, for example), the Court of Appeals also held that Long was ineffective because the claimed concession of flexibility by the respondent's expert was not a concession that the webs were flexible in use or that their flexibility would cooperate with the other elements. This conclusion is justified by the description in the Long patent under which the webs must be rigid in use, an observation which establishes the insufficiency of the concession under the rule made by this Court in its former decision holding that flexibility in a piston web was an antithetical property. All of these conclusions of the Court of Appeals are further justified by the evidence adduced through petitioners' own witnesses that the Long piston seized at a clearance of .002", and could be used only at more than double that clearance (R. pp. 458, 461, 465, 469, 360, 656, 666, 1438, 1440, 1441, 1443, 1458 and 1587). The reason, of course, is that the Long webs did not flex in time to prevent the seizing, so that the large clearance had to be provided because the webs were rigid in use (R. pp. 359, 380, 672, 675, 676, 939, 1009, 1010 and 1011). In other words, their rigidity was so great that the pressure which would cause the seizing was less than the pressure which would cause the webs to flex. This is the whole truth of the situation.

(c) Public adoption and commercial use of Jardine: At page 6 of the brief it is said that Jardine was "without substantial commercial recognition." The whole truth is that more than One Hundred Million (100,000,000) pistons embodying the Jardine invention were successfully used (R. pp. 462, 471 and 955), though no pistons which were Chinese copies of the things shown in the drawings of the Jardine patent were used. It is seldom that a Chinese copy of the device shown in the patent is used. Generally it is that particular construction somewhat modified. There never was a single telephone made in duplication of Dr. Bell's first telephone; yet every one of the millions of telephones made and used since embodied his invention, and so forth without end. In the case of Jardine the modification was simple, consisting of the addition of the belt at the bottom of the piston, as illustrated in the pistons entitled "Maynard" and Exhibit 1 at page 15 of petitioners' brief. As the Court of Appeals said in its second decision, Jardine's combination appears in the commercial pistons of respondent's licenses like Exhibit 1 (108 Fed. (2) 114).

(d) Flexible webs not read into the claims: At the bottom of page 4 it is said that the Court of Appeals read "flexing webs" into the Jardine claims. This is not correct. The Jardine claims recite the webs and the specification describes them as flexible. Since, as this Court held in its former opinion in this case, the patentee could claim only the kind of web he disclosed in his specification, the Court of Appeals construed the webs recited in the claims in the light of the specification as flexible. This is not only justified, but imperative under this Court's former decision, since the only webs described in the specification of Jardine are flexible webs and the only webs that could be claimed by Jardine were flexible webs.

(e) Hartog: The assertion of what the Court of Appeals found with respect to the Hartog patent at the bottom of page 5 and top of page 6 of petitioners' brief is not only "smart," but unjust to the Court of Appeals in its smartness. The full finding of the Court of Appeals regarding Hartog is found at 108 Fed. (2) 114. There should be added to the things which petitioners mention, the failure of Hartog to disclose the Jardine mode of operation, the description of a different mode of operation from that employed by Jardine, the absence of any proof to establish similarity or identity with Jardine (it being the defendants' burden to supply such proof), and the apparent inoperativenss of Hartog. It is only half the truth, therefore, to say that the Court of Appeals held Hartog ineffective, because Hartog's thought "was not of the bending or flexing straight ribs."

(f) Court of Appeals found Jardine's invention in his combination: At the top of page 9 of petitioners' brief it is said that the Court of Appeals found the distinguishing feature of the Jardine patent to be the flexible webs. This is not correct, and is not supported by the portion of the opinion of the Court of Appeals referred to. The distinguishing feature of the Jardine invention and patent found by the Court of Appeals at that page was—

> "*a combination* with balanced skirt flexibility due to cooperation of longitudinal and vertical slotting with flexing webs supporting retracted bosses and connected to a skirt thereby made responsive to physical compression and thermal expansion so as to permit of minute clearance between piston and cylinder."

(g) Jardine always claimed to have invented a piston combination including flexible webs: At the top of page 8 of the petitioners' brief it is stated that at no time during the prosecution of the Jardine application was it urged that Jardine was the inventor of the piston having flexible webs. This is incorrect. On the contrary, at all times during all of the proceedings with respect to the Jardine pat-

ent it was urged through the specification of Jardine that he was the inventor of a piston having flexible webs, though the term "flexible" was not always used. Sometimes the word "bending" was used in connection with the webs, though, of course, that meant the same thing.

(h) Ricardo did not have Jardine's combination; it was a failure: About the middle of the same page it is said that the thing that was stressed at the trial regarding Ricardo was that it did not disclose flexible webs. This is another half-truth, because it was urged mainly that Ricardo did not have the Jardine combination, did not operate like Jardine, and did not get the Jardine results. It was also urged and shown that efforts had been made to employ Ricardo to solve the aluminum piston problem, that such efforts failed, and that many modifications were made of it, such as that shown in the Pomeroy patent, trying to make it succeed and that it always failed (R. pp. 185-187).

(i) Status of Maynard changed by this Court: At page 25 and again at page 26 of petitioners' brief, the Court of Appeals is quoted as saying that Maynard made no inventive step over the prior art. The truth of it is that the Court of Appeals did hold in the first decision that Maynard did make an inventive step, but after this Court held that the Maynard patent did not disclose the flexible web or web flexibility, the Court of Appeals, saying it was compelled to so view Maynard on the remand, concluded in the light thereof that this Court was not impressed with the Maynard patent as "making inventive steps over prior art." The apparent purpose of this half-truth was to couple what the Court of Appeals said about Jardine and Maynard in its former decision to give the impression that the Court of Appeals did not think well of Jardine,—a conclusion manifestly contrary to the findings of the Court in its second opinion. The comments the Court of Appeals made in comparing Jardine and Maynard

together in its first opinion were predicated upon the proposition that the Maynard patent disclosed a flexible web or web flexibility.

(j) Ricardo use just enough to prove its insufficiency: At page 11 of petitioners' brief it is stated that the Ricardo piston "was used to quite an extent in Europe," citing record page 218. A reference to this page shows that the only thing on this subject is the hearsay statement of respondent's expert to the extent that they were used in Europe "to a small extent." The record shows that the Ricardo piston was unsuccessful when attempts were made to use it as an aluminum piston with anything like the small clearance that was required (R. pp. 185, 187).

(k) Court of Appeals held Long did not solve the problem and lacked identity: At pages 48 and 49 of petitioners' brief, petitioners say of the Court of Appeals:

> "The basis of the rejection of these Long pistons as statutory bars to the Jardine patent was simply that the webs of these Long pistons were not 'known to have that (flexing) quality' or that this 'was then understood' prior to Jardine's earliest proved date."

The whole truth is that in addition to this reason the Court of Appeals, for a second reason, held that the Long pistons were not a statutory bar to the Jardine patent, and that second reason was that Long did not have flexible webs in use. Thus the Court of Appeals said (S. P. B. p. 8; 108 Fed. (2) 114):

> "The Long patent did not disclose flexible webs."
>
> * * * * *
>
> "Moreover, the Long patents recite that the separated portions of the skirt *are rigidly held* against bending to the forcing thrust of the piston. A Long piston was introduced to the industry by advertisement in The Motor World, December, 1921. It was installed in the Franklin automobile, and use at a clearance of .005 was set forth in a service bulletin. The evils following clearance so great are sufficiently

recited in our former opinion, and the announced clearance negatives the thought either of web flexibility or of its understanding by the art."

A third reason found by the Court of Appeals for finding that Long did not invalidate or limit Jardine is based upon the finding that Long contributed little to the solution of the problem of producing an aluminum piston with a .002" clearance. This third reason is stated in the following language (S. P. B. p. 8; 108 Fed. (2) 114):

"it follows that Long contributed little to the solution of a problem whereby successful operation of an aluminum piston in an iron cylinder at clearances of .002 or less was achieved."

A fourth reason was that since Long worked for a considerable period in the piston art and made a number of pistons, there was never a disclosure of web flexibility in any of Long's numerous documents which described many, if not all, of the pistons which he designed over a substantial period of time (S. P. B. p. 8; 108 Fed. (2) 114).

Further discussion on the Long patents and pistons will be found at pages 54 to 86, *post*. (Point II).

(l) At page 24 of petitioners' brief it is said that the Maynard piston based on the Jardine piston could not be used in the Franklin car, citing Record page 548. There is no such statement at that page (see the evidence at R. pp. 462, 471 and 955 on the wide use of the Maynard type of the Jardine piston), but, on the contrary, Mr. Stellman, defendants' expert, there testified:

"Q. To your knowledge were other automobile companies than the Franklin during that period working on this problem of reducing the clearance with the aluminum piston? A. From the period 1915 on?

"Q. To 1920, we will say? A. Yes, sir, they were.

"Q. And how general was that problem being worked on at that time? A. Quite general, I should say. I know of one other company that used them more or less in that period.

"Q. Those who were working on it would include the leading engineers of the leading automobile companies of the country, wouldn't they? A. Yes."

Defendants' expert declined to say that Maynard was inoperative except under "severe conditions" which is true of any piston. If it was intended to refer to Record page 528, the statement is still incorrect because all that defendants' expert said there was that he would not consider Exhibit 1 suitable for the Franklin engine. If this is true it is unimportant because when a Jardine type of piston was designed for such engines as Franklin, they were not only successful, but displaced the Long piston (R. p. 1011).

(m) On the same page (P. B. 24) it is said that

"The first commercial split skirt piston put on the market by any of respondents' licensees did not appear until 1923, R. 69."

Mr. Stellman, defendants' expert, speaking of the pistons furnished by respondents' licensees, said:

"I know that that piston shown in the drawing (of the Maynard patent), and commonly known as a split skirt piston in the industry, was used in quantities since around 1921."

This date is undoubtedly before the December, 1921 date of the Long Exhibit F piston (R. p. 2271) and the 1923 date is not.

(n) On page 27 (P. B.) it is said that "There is no evidence of any piston like Exhibit 1 having gone into use without that Keystone relief." The Record shows, largely on the testimony of defendants' own expert, Mr. Stellman, that such pistons without "that Keystone relief" were used commonly, widely and successfully (R. pp. 462, 471 and 955). The piston illustrated in the Maynard patent, No. 1,655,968, to which Mr. Stellman referred (R. p. 462) was without "that Keystone relief" as shown at page 26 of petitioners' brief. Moreover, what petitioners have christened "that Keystone relief" is no more than shaving off a corner

of the walls of the relief. Since it has no effect on operations and results, except perhaps in degree, it is entirely immaterial to the case. The only importance of challenging the statement is to show how unreliable are the statements in petitioners' brief.

These instances will illustrate the character of petitioners' assertions. We might continue almost indefinitely to point out other like instances for there is statement after statement in the brief that is either erroneous, a half-truth, or pregnant with misleading innuendo or inference.

ARGUMENT ON PETITIONERS' SPECIFICATION OF ERRORS.

We will reply to the Petitioners' arguments following their points and procedure.

POINT I.

(a) The Court of Appeals did not treat "flexing webs" as essential elements of the Jardine patent; they treated webs as essential elements whether they were flexible or the equivalent thereof.

(b) Webs which are flexible, as stated in the specification, are recited in the claims; the Court of Appeals did not read "flexing webs" in the claims, but construed the webs in the claims as flexible in the light of the specification.

(c) Webs that would flex were not surrendered during the prosecution of the application, nor were "flexing webs" so surrendered, if that makes any difference. What were surrendered during the prosecution of the application were combinations of elements different from the combinations which were preserved.

(d) The Court of Appeals did not refuse to follow the decisions of this Court, but was meticulous in its effort to follow the most recent decisions of this Court, and particularly this Court's first decision in this litigation, wherein this Court overruled the Court of Appeals.

(a) The rule that one part of a document may be construed in the light of another part is not peculiar to patents or the patent law. It runs throughout all the law; it runs to the construction of contracts and a patent is a contract. There has never been any question, in the patent law or in its application, of the right of the Court to construe a claim in the light of the specification in accordance with this general rule of contracts. In order to avoid falling into the confusion into which the petitioners have fallen, it is necessary to consider the rules on these questions as follows:

First, that an element cannot be read into a claim;

Second, that a claim cannot be construed to include a property or feature not described in the specification, and

Third, that an element in a claim may be construed in the light of the specification.

First—If the Jardine claims did not recite the element "webs," the webs could not be read into the claims from the specification. That is the rule in *McCarty v. Railroad Company, White v. Dunbar,* and other cases relied upon by the petitioners. Petitioners recognize this rule and consequently try to draw a red herring across the trail by using the term "flexible webs" as if the rule required the claim to recite the property and details of the webs. In other words, that every claim would be no broader than the specific embodiment of the invention shown in the specification—contrary to the rule in *U. S. v. Societe,* 224 U. S. 309, 328.

Second—This is the rule made by this Court in its first decision in this cause. It was carefully followed by the Court of Appeals.

Third—As far as construction of claims and specifications is concerned, *the difference between the issue now before the Court on the Jardine patent and that previously before this Court on the Gulick and Maynard patents, is that Jardine in his specification described his webs as*

flexible and Gulick and Maynard did not. When effort was made to construe the Gulick and Maynard claims as if reciting webs as flexible, there was nothing in the specification to support such a construction. On the instant consideration, however, the Jardine specification, in referring to the webs as flexible, furnishes a basis for a construction of the term "webs" in the Jardine claims as flexible, if that is necessary.

As we have said, it has always been the rule that one portion of a contract can be construed in the light of other portions. Since a patent is a contract, it is subject to the general rule of construction of contracts (*Walker on Patents,* Deller Edition, pp. 1204 and 1205, citing cases in this Court). The entire instrument, including the drawings and specification of a patent should be used in construing it (*Walker on Patents,* Deller Ed., p. 1205, citing cases from this Court). The claims in the patent should be so construed as to uphold and not destroy the right of the inventor, and this is particularly true where the patent covers a meritorious invention, as the Jardine patent has been held to do (*Walker on Patents,* Deller Ed., pp. 1205-1207).

A question of construction of patent and claims is a question of law for the Court (*Walker on Patents,* Deller Ed., pp. 1209-1210, citing cases from this Court). That the language of the claims may be construed in the light of the specification is elementary patent law.

This Court has had occasion to apply this rule of construction by aid of the specification in a long line of cases dating from as far back as 1850 and running down to some of the most recent decisions of this Court.

In *Carnegie v. Cambria,* 185 U. S. 403 a claim was presented which recited metal without saying whether it was "cupola" metal or "blast furnace" metal. It was urged that the claim was broad enough to cover both and invalid since the use of cupola metal in such a combination was old. This Court consulted the specification and found

the specification was devoted to "blast furnace" metal and construed the term "metal" in the claim as meaning blast furnace metal in the light of the specification, saying (185 U. S. 432):

> "*The claim of a patent must always be explained by and read in connection with the specification,* and as this claim clearly includes metal taken from blast furnaces, the question whether it includes every molten metal is as much eliminated from our consideration in this case as if it were sought to show that the word 'metal' might include other metals than iron."

In *Hogg v. Emerson,* 52 U. S. 587, this Court said (p. 606):

> "The court did right, too, in holding to the propriety of looking *to the whole specification,* and also to the drawings, for explanation of any thing obscure."

In *Seymour v. Osborne,* 78 U. S. 516, this Court said (p. 547):

> "Where the claim immediately follows the description of the invention it may be construed in connection with the explanations contained in the specifications, and where it contains words referring back to the specifications, it cannot properly be construed in any other way."

In *American Fruit v. Brogdex,* 283 U. S. 1, this Court said (p. 6):

> "*The claim of a patent must always be explained by and read in connection with the specification.*"

In *Smith v. Snow,* 294 U. S. 1, 14, this Court said:

> "Examination of the claim, in the light both of scientific fact and of the particular form in which the petitioner reduced the claim to practice *as described in the specifications,* makes it plain that the claim does not call for a particular order or arrangement of the eggs in staged incubation in the incubator, or that the propelled current should reach them in any particular order, or that it should be guided, controlled or directed by any particular means, or in any particular manner

other than that it should be of sufficient velocity to produce the results prescribed by the claim."

Therefore, when the petitioners ask the Court to change this rule, they ask the Court to do something more than change a long established rule of patent law. They ask the Court to change a rule of contract which was adopted long before there was any patent law and has been followed ever since, not only in the Courts in this country, but in the Courts in England before there was a United States (17 *C. J.*, Sec. 707, *et seq.*).

Since claim construction and patent construction, like the construction of any other document, is a question of law for the Court, the construction of the Jardine claims given by the Master is not entitled to any weight, as compared with the construction given the claims by the experienced and able Court of Appeals.

Even the cases relied upon by petitioners reflect the rule, for while in each *White v. Dunbar* and *McCarty v. Railroad Company* it is held that an element cannot be read into a claim, this Court in each case went to the trouble of explaining that such a ruling did not mean that the context might not be resorted to for the purpose of better understanding the meaning of the claim, and to show the connection in which the device is used and that it is operative while the opinions we have cited, *supra,* show that these rules are applicable to claim constructions. All of these statements appear in the quotations from *White v. Dunbar* and *McCarty v. Railroad Company* appearing at page 31 of petitioners' brief. Likewise, in *Permutit v. Graver,* this Court, in refusing to construe the claims as reciting a "free" zeolite bed, was careful to point out that the specification failed to describe a "free" bed. Likewise in its former decision in this litigation (305 U. S. 47) this Court was careful to explain that no basis could be found in the specification for the term "flexible" and, therefore, the webs recited in the claims could not be construed to be flexible. In other words, in both *Permutit v. Graver* and in

Schriber v. Cleveland Trust, this Court is careful not to breach the rule of patent law and of contract law that one part of a contract like a patent claim may be construed in the light of the specification.

Therefore, when the Court of Appeals went to the specification to construe the webs recited in the Jardine claims and found that the specification described them as flexible, the Court was right under the law of this Court and of contract law in general in so construing the webs in the light of the specification.

The language of the Court of Appeals on this subject is as follows (S. P. B. pp. 6 and 7):

> "While the specimen claims of Jardine 1, 8 and 11, though reciting the web as an element do not incorporate therein the property of flexibility, *yet in the light of the description they must be so interpreted, for it is clear that the Supreme Court in reversing our decision departs not at all from the rule that claims must be read in the light of the specification,* since it is pointed out with particularity in respect to Gulick that his specifications point to no inadequacy in the structure or function of webs of the prior art which would be remedied by the webs specified, and to no function to be performed by them other than as a means of connecting and holding head and skirt so as to maintain the air gaps between them and to support the wrist pin bearings. Jardine repels this criticism of the Gulick application. It is also pointed out that Gulick failed to explain the principle of his machine so as to distinguish it from the prior art. Jardine points to prior art failure. 'I have found,' he says, 'that these difficulties can be overcome by constructing a piston with its skirt or guide portion supported and slotted or divided in a manner to permit deformation and deflection of parts thereof without interfering with the performance of the essential functions of the respective parts.' "

It not only appears from this language that the Court of Appeals was careful in applying the established rule.

both in patents and contracts, but was exercising care not to disagree with the former opinion of this Court in this cause.

Petitioners must have been well aware of the nature of their effort to ask this Court to overrule the established practice both in patents and contracts, for effort is sought to bolster up the contentions by resorting to a case in the Court of Appeals in the Sixth Circuit in an effort to make out an exception. In the case relied upon, *Scaife v. Falls City,* 209 Fed. 210 (P. B. 34), the patentee asked the Court to read *structure into the claim* (not to construe structure already in the claim, as here). The claim recited a filter, and the patentee asked the Court to read structure, i. e., "a filter divided into several units" into the claim, which would have been a violation of the rule in *McCarty v. Railroad Company.* This the Court refused to do, and properly so, but that has nothing to do with the instant case. The Court of Appeals did not in the case at bar read any structure into the claims. They only interpreted structure already in the claims as having a certain property which the specification described it as having and which the merest tyro in the business would know that it did have whether it was in the specification or not (R. pp. 201, 568, 125). In the cited *(Scaife)* case the real reason why the Court would not read the claim as the patentee requested was that there was another claim which recited the structure which the patentee proposed be read into the first claim under consideration, and the Court would not read it into the first claim under consideration because it would have made it coextensive with another claim. Thus the Court said on the subject (209 Fed. 213):

> "Resorting to all these means of interpretation, including a comparison of the several claims, we are satisfied that claim 10 will not bear this narrow construction; and not the least of the considerations compelling this result is the fact that *this peculiar form of filter is the dominant thought of another claim.*"

In the instant case the Jardine claims readily bear the construction and when given the construction are not made coextensive with any other claim in the patent.

(b) The omission of the word "flexible" from the Jardine claims may have been deliberate and intentional without making the rule of construction inapplicable. As a matter of practice, parties making contracts, of which patents are one form, do not, and are not, expected to repeat in each section of the contract everything that is said in every other section. When two people enter into a contract for the sale of a black horse or a race horse they do not have to repeat the "black" or the "race" every time the horse is mentioned elsewhere in the contract. To do so would make contracts cumbersome and repetitious. For that reason the rule of construing one part of the contract in the light of the other part was established in the early days of contract law and has been followed ever since. The parties not only deliberately and intentionally, but with all of these things aforethought, do not repeat the "black" or the "race" before the word "horse" every time it appears in the contract. They know that they are not required to do so. Hence they "deliberately and intentionally" omit to do so. It is also true in the case of patents. Jardine's solicitor knew that he had described the webs as flexible in the specification. He knew the contract law. He knew a patent was a contract. He knew the rule that one part of a contract or patent can be construed in the light of another part. He knew the elemental rule that a term in a patent claim could, and as some of the decisions say "must," be construed in the light of the specification and for that reason he found it unnecessary to include the word "flexible" before webs in the claims. So whether he left the word "flexible" out of the claim deliberately and intentionally is immaterial. Petitioners' counsel know all these rules and that is the reason they keep talking about "flexible webs," not being in the claims, thereby hoping apparently to lead

one to believe that the webs are not recited in the claims. They very well know the rule that if the webs are in the claims and the specification describes the webs as flexible, the webs may be so interpreted.

(c) At the bottom of page 34 of petitioners' brief it is said "thereafter claims including flexible webs were added by amendment" to the Jardine application. *No such claims were added.* Claims reciting parts that were "yielding" were inserted though such parts were never stated to be webs and there is nothing in this record to show what parts were meant, much less that the webs were meant. Likewise, there is nothing in this record to show what was meant by "yielding"; the record does not show that flexing was meant by yielding. There are many kinds of yielding besides flexing, such as skewing, compressing, distorting or displacing, for example.

Petitioners' discussion of the proceedings in the Jardine file wrapper is also corrupted with the same heresy. Instead of talking about "webs" as elements, the talk is about "flexible webs," as if the webs and the flexible webs of the Jardine patent were two separate and distinct things and as if there were no rule that the webs of the claims could be construed as flexible in the light of the specification.

The salient and ancient rule that inventions are to be found in the entire combination and not in the single elements of the claims by themselves (*Leeds & Catlin v. Victor,* 213 U. S. 325, 332) and the ancient rule that a combination claim cannot be invalidated merely because some of its elements are old (*Expanded Metal v. Bradford,* 214 U. S. 366, 381) are both ignored or offered here for sacrifice. The combinations in the claims which were presented in the Jardine file wrapper proceedings and cancelled were different combinations from those which appear in the claims in the Jardine patent. It was the combinations in the cancelled claims that were yielded and not the differ-

ent combinations in the claims in the Jardine patent. Therefore, it does not matter what elements were included in the cancelled claims as long as the combinations were different. The estoppel only goes against asserting for the claims in the patent the scope accorded the cancelled claims. The estoppel only goes to an effort to recapture what was yielded in the Patent Office as a condition of the grant. None of the claims of the Jardine patent, whether the webs be construed as flexible or not, were yielded in the Patent Office. The claims yielded were much broader.

It would not matter if Hartog and Pomeroy and Long had disclosed flexible webs if they did not disclose the combinations of the Jardine claims, which they did not. In other words, as this Court said in the *Expanded Metal* case, the combinations in the Jardine claims could not be invalidated merely because one of the elements of those claims was found in Hartog, Pomeroy or Long.

Such fundamental rules are not only ignored but flouted throughout the petitioners' brief. The brief is written as if the Court would wave these rules aside. Instead of discussing the combinations of the claims and comparing structures through the combinations, effort is made to compare them merely through one feature or one element of the combinations claimed.

It might be said that if such long established rules are to be reversed or ignored, and the whole question is to be decided upon whether or not there is a piston in the prior art having a flexible web, then we must direct our attention to the question of whether or not there was a flexible web in the prior art. If, furthermore, the petitioners are to have the privilege of *ex post facto* interpretations of the flexibility or rigidity of prior art webs which was not accorded the patentees in the first consideration of this litigation by this Court, then we have still another situation to meet which almost resolves itself into a proposition that the law for the petitioners is not the law for the respondent.

When the established rule of contract, patent and claim construction, and the established rules that it is the combinations in the claims that are to be considered in making comparisons and not their individual elements, are followed, then there is nothing to the petitioners' case, as is evidenced by the fact that they never attempt to meet this rule, but always talk about the flexible webs, as if that was all there was to the Jardine invention, petitioners assert that the prior art has flexible webs when there is no evidence that any did have flexible webs; some evidence is cited with the claim that it taught flexibility years after Jardine's patent issued. As we show this evidence can under no interpretation have such flexibility as to permit the maintenance of the .002" clearance and to preserve the ruggedness and durability essential in the piston.

(d) Upon the basis of this heresy it is claimed that the Court of Appeals considered that flexing webs was a distinguishing feature of Jardine and that it is necessary to read the flexing webs into the claims to avoid the prior art. It ought to be sufficient answer to this to say that the Court of Appeals did not read "flexing webs" into the claims. The webs were already in the claims. However, since counsel argue from emasculated excerpts from the opinion of the Court of Appeals, we add to what we have already said and what we have already quoted on the subject, that the Court of Appeals looked upon the Jardine invention as the combination of elements recited in the claims and held them valid because such combinations were not in the prior art.

At page 36 of their brief counsel quote, on this subject, two and one-half lines from the first opinion of the Court of Appeals. The full quotation on this subject is as follows (92 Fed. (2) 336):

> "He cut away all the skirt portions at the webs, extending the latter to nearly the length of the skirt parts or slippers. Horizontal slots partially insulated the slippers from the head and these were split verti-

cally to render them yieldable to contact with the cylinder wall. The head was integrally connected to the skirt only in the region above the bosses. His thought was that since heat expansion tends to increase the diameter of the piston in a direction parallel with the wrist pin bosses, when the skirt around the bosses is removed, the central part of the web is free to move while its ends are restrained and resisted by the skirt faces in contact with the cylinder wall."

The combinations in the Jardine claims are not found in the prior art, whether the webs be considered as flexible or not.

The Court of Appeals did not say that the webs in the Jardine claims must be construed as flexible to make the claims valid. What they decided was that it was perfectly proper to construe the webs as flexible in the light of the specification and when so construed, the claims were valid. They did not, however, say that the claims would be invalid if they had not resorted to the specification to note that it was proper to construe the webs as flexible. It is not essential that the webs be flexible or that they be construed as flexible to avoid the prior art since the combinations in the claims are not found in the prior art, whether the webs be construed as flexible or not. Petitioners do not show that such a combination is in the prior art. The Patent Office did not find it in the prior art even when it erroneously believed that flexible webs were found in that art. Jardine, as his specification shows, depended upon the flexibility of the skirt and upon the "deformation and deflection of the parts," as he says in his specification (see p. 1, line 25; p. 2, line 97). All of these factors, including the skirt flexibility, web flexibility, deformation, deflection, and displacement of parts, contribute to the solution of the problem. There is no evidence that all have to be present at the same time, though in the preferred form of his invention all are present. There is no prior art device which relies upon all except web flexibility. Therefore, even though

the Jardine claims were not construed in the light of the specification, the claims would be novel and patentable.

There is no dispute that if they are construed in the light of the specification they would be novel.

The Court of Appeals did not read "flexing webs" into Jardine's claims contrary to this Court's decision, as petitioners say at pages 38 to 41 of their brief. Here again we have the reference to flexible webs instead of webs construed to be flexible in the light of the specification. In its former decision this Court held that webs and claims could not be construed as flexible where that quality had been denied in the specification. It did not hold that webs in claims could not be construed as flexible where that quality had been stated in the specification. Everything in this Court's former decision was convincing that this Court adhered to the ancient rules of contract and patent law that claims could be construed in the light of the specification, as is evidenced by the fact that this Court reached the conclusion that the term "flexible" was improperly included in the Gulick specification before concluding that, therebecause, the Gulick claims were invalid. In other words, in order to lay a foundation for holding the Gulick claims invalid, this Court found it necessary to expunge the description of the flexibility of the Gulick webs from the specification on the ground that it was new matter. *Contra*, if flexibility had been in the specification of Gulick originally, and not inserted as new matter, there would have been no basis for deciding the claims to be invalid, on that ground.

This is also true of the Maynard patent, since before holding the Maynard patent invalid, as not disclosing webs which were flexible, this Court examined the specification of Maynard to see if there was reference to the flexibility of the webs and, not finding it there, the claims were held invalid because the term "webs" in the Maynard claims could not be construed as being flexible. In the instant case we depart in two ways; first, the Jardine specification does

describe the webs as flexible and, second, webs that are flexible are not essential to the Jardine combination. Therefore, it is error to say, as petitioners do at the top of page 38 of their brief that "what the Court of Appeals actually did was to practically substitute the Jardine patent for the Gulick patent." On the contrary, what the Court of Appeals did was to find "flexible" relating to webs properly included in the Jardine patent, whereas it had been improperly included in the Gulick patent, as this Court found. Insofar as this litigation is concerned these are all the differences that matter.

Not only did the Court of Appeals follow with meticulous care the law made by this Court in its former review of these cases, but the Court of Appeals exercised special care to conform to the high standard of invention set by this Court in its recent decisions. On this subject the Court of Appeals said (108 Fed. (2) 112):

> "for though we are as sensitive as is the Court of Appeals of the Second Circuit (*Buono v. Yankee Maid Dress Corp.*, 77 F. 2d 274, 276), to 'the high standard demanded for invention by the decisions of the Supreme Court in recent years,' attested by many of our more recent decisions, yet we also share Judge Learned Hand's understanding that the Supreme Court has not departed from the principle that recourse must be had in doubtful cases to the history of the art for the interpretation of claims and the existence of invention." (S. P. B. p. 5.) (See *Smith vs. Snow, supra; Paramount vs. Tri-Ergon, supra.*)

Hartog and Jardine: The Jardine claims were allowed and patented over Hartog because (1) the combinations of the Jardine claims are not found in the Hartog structure, (2) Jardine's mode of operation is different from Hartog's, (3) Hartog did not get, and did not claim to get, the Jardine results, and (4) Hartog failed where Jardine succeeded in solving the piston problem.

A structural claim is not required or expected to recite mode of operation, results or success over failure. Nevertheless, these factors are evidence upon the question of the importance of the differences in structure and the patentability of the invention. After all, patent cases are, or at least were before petitioners' brief was written, tried on substance and not on words (*Machine Co. v. Murphy*, 97 U. S. 120, 125 and a host of other cases citing this leading decision).

In discussing the patentability of Jardine over Hartog, the Court of Appeals discussed the evidence on the differences in operations of the two, the differences in the achievements, the success of Jardine where Hartog was a failure, as well as the differences in structure. (108 Fed. 2d 113 and 114). In so doing the Court made, *inter alia*, the statement quoted from the Court's opinion at the bottom of page 39 and again in the middle of page 40 of petitioners' brief. With characteristic error the petitioners say that no claim was ever made by Jardine that he was the inventor of a piston characterized by the matter in this excerpt, and with characteristic sophistry argues that the Court of Appeals "apparently" read the subject matter of this excerpt into the Jardine claims.

Jardine asserts in his patent that the features contained in the excerpt are characteristic of the preferred forms of his invention. Thus, at page 2, lines 19 to 34 of his patent (R. p. 1296) there occurs the following:

> "This gives in effect *a cantilever structure* weakest at its support, namely, along the dotted lines 13 in Figs. 1 and 4. Thus the reaction force of the cylinder wall on the outer faces of the guide segments as the piston expands tends to cause *bending of the webs* 6 along said lines 13. *Due to the bending of the web* sections 6 and the forcing together of each pair of segments, the guide part of the piston may undergo a considerable *thermal expansion* without a corresponding increase in the outer diameter thereof and

thus *a small initial clearance* can be used without danger of scoring or seizure of the piston."

The italicized parts are sufficient to explain the pertinency of the excerpt.

The Court of Appeals read none of the subject matter of the excerpt into the structure claims. The Court of Appeals, however, did construe the claims in the light of the specification and referred to the context of the specification for a better understanding of the meaning of the claims. It construed the claims, as it was proper that it should do, to operate and to yield the results claimed for the Jardine structure such, for example, as the bending property of the webs, the operation on the cantilever principle, the yield to thermal expansion, etc., all of which are features of operation and results and have no place in a structure claim which, as the name indicates, is intended to recite structure.

The excerpt from *McCarty v. Railroad Company* at the top of page 40 of petitioners' brief is not applicable because no "element is included in the claims"; bending is not an element; the cantilever principle is not an element; thermal expansion is not an element. All of these are properties or principles. The language of the decisions which are applicable is such as found in the excerpt from *White v. Dunbar* and the other case relied upon by the petitioners in the premises (This brief, pp. 38 to 41). This language from *White vs. Dunbar* found on page 31 of petitioners' brief is as follows:

"The context may, undoubtedly, be resorted to, and often is resorted to, for the purpose of better understanding the meaning of the claims."

Likewise, in *Altoona v. Tri-Ergon,* discussed in the footnote at the bottom of page 40 of petitioners' brief, it was—

"The addition of a new element"

that was forbidden. This Court did not forbid the construing of the elements of the claim in the light of the specification or resorting to the context for a better understanding of the meaning of the claim. Justice Stone, who wrote the opinion in *Altoona v. Tri-Ergon,* also wrote the opinion in *Smith v. Snow, supra.*

It is, therefore, apparent that it is mere sophistry to charge the Court of Appeals with reading elements into the claims when the Court of Appeals did no more than refer to the context to construe the claims. Moreover, there was no need of reading anything into the claims since they already distinguished from each of the prior art structures by structural elements and, when we come to substance, since that must be considered, in the adjudication of patent cases, Jardine succeeds where these others failed. The first proposition is evidenced by petitioners' effort to select features of structure from different prior art devices to build up the Jardine combinations and the latter by the repeated statement of half-truths regarding the prior art constructions, such as the claim that Long was a success when the record shows that he was a failure at the .002" clearance which was an indispensable concomitant of success.

Hartog did not undertake to claim to solve the aluminum piston problem. He makes no claim that his piston was to be of a material different from the cylinder. Therefore his piston was manifestly to be of the same material as the cylinder, as was the custom in his day when the "black eye" given the aluminum piston had discouraged such people as Hartog; his piston was to be fitted in the cylinder not at a clearance, but at a pressure. He provided yielding skirts in order to be able to compress his piston so as to insert it in a cylinder that was smaller than the piston, as one does when one "puts the big pot in the little one." He did not expect the skirt to, and there is no proof or claim that it could, flex sufficient to

compensate for the differences in expansion between an aluminum piston and an iron cylinder. While his skirt sections, curving from the wrist pin to the end of the skirt part, would wind and unwind, thus yielding under the pressure of the hand or a clamp to insert them in the cylinder, they would not flex or bend in the sense in which the Jardine webs do to contribute to the solution of the aluminum piston problem. *Hartog's piston worked just the contrary of Jardine's in that Hartog provided spring sections to make a firm contact between the piston skirt and the cylinder and Jardine did everything that could be done to prevent this firm contact.* Hartog made a continuous pressure against the cylinder; Jardine prevented this to maintain the proper clearance. What was Hartog's "meat" was Jardine's "poison." In the Hartog piston where the materials of the piston and cylinder were the same, a yielding part which made a firm contact would be "meat" whereas if an aluminum piston should make such a firm contact with the iron cylinder, it would be "poison."

Hartog not only lacks ruggedness and durability, but it is so flimsy it would yield and wobble under the pull and push of the crank rod (R. p. 259).

Hartog antedates Jardine on this record by less than thirty days; since little was said about Hartog by Petitioners (R. pp. 215 and 259), until after the status of Gulick was changed by this Court, Jardine did not carry his dates back of Hartog. It was not necessary to do since Petitioners made no effort to, prove identity or substantial identity beyond a reasonable doubt. Now it is sought to supply by innuendo what should have been supplied by evidence convincing beyond a reasonable doubt. The only evidence on the question is that at record pages 215 and 259 which proves beyond a reasonable doubt that Hartog was unsuccessful and lacked identity with Jardine. Hartog

is a typical case where ruggedness, durability and positiveness in action were sacrificed to get skirt parts that would yield to coil up and out.

The webs of Exhibit 1 are flexible and the difference between the flexibility of the webs of Exhibit 1 and of the Jardine patent is merely a matter of degree. The testimony of defendant's own expert on this subject is sufficient. Mr. Stellman, defendant's expert, testified on the subject on re-direct examination as follows (R. p. 581):

> "Q. Mr. Richey asked you on cross examination whether the flexibility of Exhibit 1 and the Jardine patent structure was one of degree, and I believe you answered yes. What did you have in mind when you made that answer, that the flexibility was the same? A. No, it was comparable in degree.
>
> "Q. And how in degree? A. One might be more flexible than another in degree."
>
> (See pp. 566 and 530 of the record.)

With this our expert agreed (R. pp. 953-955).

The quotation relied upon from plaintiff's expert is inappropriate and must yield in any event to what Mr. Stellman and Dr. Jeffries said. It is inappropriate because it deals with a hypothetical structure, whereas the testimony of Mr. Stellman and Dr. Jeffries deals with the actual structures.

There is no evidence in the record to support the conclusion of the Master quoted at the top of page 42 of petitioners' brief. All the testimony, even that of the defendant's expert, is contrary, as is clear from the above quotation from Mr. Stellman's testimony at page 581 and also from his testimony at pages 566 and 530, all to the effect that the Exhibit 1 webs are flexible, and the only difference between the Exhibit 1 webs and the Jardine webs in that respect is a matter of degree of flexibility.

POINT II.

THE LONG PISTONS AND THE COURT OF APPEALS' VIEWS WITH RESPECT THERETO.

There were several defenses against the Long pistons, some of which only were discussed by the Court of Appeals; those discussed were sufficient to dispose of Long and, as the Court of Appeals explained, it could not discuss all the issues in an opinion which must have limits. Therefore, it is not to be assumed that the Court of Appeals agreed with petitioners on the issues not discussed as petitioners contend (P. B. 17 and 53).

(1) The first defense against Long is that the record shows that none of his numerous pistons solved the piston problem of reducing the clearance to .002" and preserving the ruggedness and durability of the piston, notwithstanding the efforts to "half truth" the auditors into believing that Long's use at .005" was a solution of the piston problem. On this first proposition the Court of Appeals found (S. P. B. p. 6; 92 Fed. (2) 334):

> "Long's recognition of an existing problem in any art, and the advantages to accrue to an industry from its solution, *coupled with repeated failures to find solution,* has ever been considered as highly persuasive of invention when success is finally attained."

and (S. P. B. p. 8; 108 Fed. (2) 114):

> "It is said that pistons could not in an air cooled motor as was the Franklin, be machined to the minute clearance possible in water cooled motors. If true, it follows that Long contributed little to the solution of a problem whereby successful operation of an aluminum piston in an iron cylinder at clearance of .002 or less was achieved. It should, moreover, be noted that Long was a worker in the piston art for a considerable period. Three of his patents are in the record. It is conceded that No. 1,872,777 was his best effort, yet the structures urged to anticipate Jardine were devices prior to it, and while they may have had some commercial history,

his latest patent still failed to describe or claim web flexibility."

There is no finding by the Master or the District Court below that Long ever succeeded at .002" clearance. There is no finding by either Master or District Judge that Long cured the slapping, a *sine quo non* of the solution; he did not (R. p. 469). There is no evidence to support any such findings. Unless, therefore, Jardine's success is to be wrecked on Long's failure, there was no need of the Court of Appeals rejecting Long on a second or third ground.

Nor did Long solve the aluminum piston problem in the air-cooled motor for his piston was never satisfactory in the air-cooled motor which the Franklin Company employed. In the face of a crying demand for an aluminum piston which would solve the aluminum piston problem (R. p. 458) the Franklin Company was the only manufacturer of internal combustion engines or automobiles who adopted and used the Long piston. In the Franklin car the behavior was unsatisfactory. The pistons slapped, collapsed, and otherwise misbehaved (R. pp. 458, 469, 939, 401 and 461). It was never satisfactory in production (R. pp. 455, 359, 1587, 1438). It was never a solution of the piston problem (R. p. 968). The Franklin Company was constantly trying to supplant it (R. p. 1793), as other workers in the art who knew of its behavior in the Franklin car were trying to displace it (R. pp. 363, 364, 1010 and 1011). Its use was a mere drop in the bucket compared with the pistons used (R. p. 399). The pistons would not stand up (R. p. 672). It was supplanted at an early date even in the Franklin car (R. p. 1011).

The claim that because Long was a failure in the Franklin car it would have been a success in other automobiles because the problem was less difficult in other automobiles than in the Franklin is, of course, a mere conjecture not borne out by the facts. Petitioners furnished, and could furnish, no evidence that the Long piston did solve the

piston problem in the water-cooled engine, though the burden was upon them to prove such beyond a reasonable doubt. History shows that it did not solve this problem because it was not adopted in these other cars. Its adoption, as we say, was limited to the Franklin car, though there was a crying demand for this kind of piston which was supplied as soon as the pistons involving the Jardine invention came upon the market.

Several places in petitioners' brief (pp. 25 and 55) it is charged that the respondents manhandled Long and drove him out of the piston business. This is not true. The record shows that his piston was driven out by the pistons involving the Jardine invention (R. pp. 672, 141, 176 and 187), because the latter was a solution of the aluminum piston problem and nothing that Long had produced was such a solution. The procedure of the respondent in the premises amounted to no more than the institution of a suit against Long for infringement of patents which, under the statutes and law of Congress, the respondent had the right to bring. Long was satisfied because he settled the suit; it is petitioners who try to make trouble of it.

(2) The second ground upon which the Court of Appeals rejected Long was lack of identity. Long's many efforts at the piston problem and his many patents prior to Jardine culminated in the piston illustrated and described in his patent No. 1,872,777 (R. pp. 1736-1738). On the subject of lack of identity the Court of Appeals said (S. P. B. p. 8; 108 Fed. (2) 114):

> "Moreover, the Long patents recite that the separated portions of the skirt are rigidly held against bending to the forcing thrust of the piston." and
>
> * * * * *
>
> "The Long patent did not disclose flexible webs."

Both statements are verified by the description of the Long piston on the second page of Long patent No. 1,872,772 (R. p. 1738).

Thus Long disclosed a piston skirt weakened by six vertical and two horizontal slots dividing the skirt into six sections which were to be held rigidly against bending by the webs and also to be so held against falling apart in use which they sometimes did do (R. pp. 380, 1438, 1440, 1441).

Neither Master nor District Judge made any finding to the contrary; no evidence in the record would support a contrary finding. The Court of Appeals, having disposed of Long on two grounds, neither in discord with either Master or District Judge, might be excused from discussing other grounds.

(3) The third ground upon which the Court of Appeals rejected Long was that since the antithetical property of "flexible" could not be accredited to Gulick's webs, since there was no basis in the Gulick specification therefor, the same rule applied to Long. Petitioners then contended that our expert had admitted that Long's webs were flexible (of which we will say more hereinafter) and that Long's description of webs that were rigid should then be construed as flexible. This the Court of Appeals rejected, saying (S. P. B. p. 8; 108 Fed. (2) 114):

> "Since the argument that the webs of Gulick were laterally flexible to the understanding of those skilled in the art was rejected, so must we reject inference that prior to Jardine the art understood the webs of Long to be flexible in the absence of clearly convincing evidence that they were known to have that quality."

No judicial finding below the Court of Appeals and no evidence in the record challenges this conclusion. It is warranted by a long line of cases (see cases cited at page 69 of this brief).

The claim that our expert testified that the Long webs were flexible related not to any piston shown in any Long patent, but to the piston illustrated for the first time in

The Motor World, December, 1921 (R. p. 2271), more than a year after Jardine's filing date.

(4) Being ousted from all other Long pistons, petitioners have to resort to this 1921 Long piston (also called Ex. F).

The Court of Appeals disposed of that piston in the following language (S. P. B. p. 8; 108 Fed. (2) 114):

> "A Long piston was introduced to the industry by advertisement in The Motor World, December, 1921. It was installed in the Franklin automobile, and use at a clearance of .005 was set forth in a series bulletin." (p. 1590.) "The evils following clearance so great are sufficiently recited in our former opinion," (92 Fed. (2) 331 and 332) "and the announced clearance negatives the thought either of web flexibility or of its understanding by the art."

No finding below the Court of Appeals and no evidence in the record challenges these findings.

(5) Since lack of identity and failure are each sufficient to dispose of the 1921 Long piston, it was not necessary for the Court of Appeals to pursue the matter and dispose of it on other grounds, yet because the Court did not, petitioners repeatedly assert that "the Court of Appeals did not question the fact" that this piston antedated Jardine. The Court did not; it was silent on this subject unless the comment by the Court of Appeals that

> "A Long piston was introduced to the industry by advertisement in The Motor World, December, 1921" (S. P. B. p. 8; 108 Fed. (2) 114),

may be taken to mean that December, 1921 was the earliest date for the piston there illustrated, a very fair inference for the use of the word "introduced." Certainly a more reliable inference than that the Court thought otherwise because the Court said no more on the subject.

(J) In view of the lack of identity of this latest Long piston and its failure at .002" clearance, its earliest date

is unimportant. Yet counsel urge it and are as erroneous here as elsewhere (see P. B. pp. 53 and 54).

There is no documentary evidence that this Long 1921 (Ex. F) piston was in existence prior to Jardine's filing date; the first documentary evidence is the December, 1921 Motor World (R. p. 2271) mentioned by the Court of Appeals (S. P. B. p. 8; 108 Fed. (2) 114). Petitioners claim no other documentary evidence. All the oral evidence claimed to relate to this piston might just as well have related to one of the other numerous Long pistons which were issued in an almost continuous stream over the years by Long as effort followed failure and failure followed effort in a rapid series (R. pp. 398, 429, 444, 1532, 1537, 1728-1732, 1668). Indeed, the witnesses, though well coached (perhaps more than is proper, R. pp. 358, 369, 400, 408), often warned the Court that they could not themselves trust their memories among so many Long pistons after so many years (R. pp. 379, 444, 447).

Red herring dragging is manifested by such claims as the following (P. B. p. 54):

> "Chadwick produced the pattern and core box used which produced it, and that this is true is self-evident from the fact that the casting, Exhibit NN, produced by the employment of the pattern and core box is a duplicate of Exhibit F, except that Exhibit F is machined."

The "nigger in the wood pile" here is the sole difference between Exhibit F (the 1921 Long piston) and the Long piston of patent No. 1,872,772 is in the "machined" part, so that the pattern and core box could just as well have been used for the latter as the former (R. pp. 426, 427, 429, 444, 447, Exhibit NN, see P. B. p. 54).

Next it is said (P. B. p. 54):

> "The Long patent, 1,872,772, with its filing date of March 7, 1919, is a duplicate of this piston, except that it does not mention the relief in the regions of the bosses, nor that the webs are flexible."

If the webs of the Long patent piston (1,872,772) were not flexible, those of the 1921 piston (Exhibit F) would not be.

There then follows in the petitioners' brief a discussion of some activity by a Mr. Venner who was trying to improve upon some one of the Long pistons. There is no documentary evidence of what Long piston was before him or of just when he began his efforts to improve it. Whatever it was, he recognized its shortcomings, as he said, and was trying to eliminate them (R. p. 362). Counsel refer to pages 352 and 353. We find no references on these pages to a Long piston like that illustrated in the Motor World of December, 1921 (Ex. F). Apparently the discussion is injected rather for the purpose of touching up the "hard case" which counsel seem to think they have because of the license to Aluminum Company of America, since it is contended that Aluminum Company of America made castings for Venner, but there is no evidence that the castings had anything to do with the Ex. F Long 1921 pistons. It is said that Venner was familiar with the Long piston, but there is no documentary evidence of which of the Long pistons it is claimed that Venner was familiar with. It is said that Aluminum Company of America made castings for the Long pistons in 1920, but there is no evidence that they made any castings from which pistons like Exhibit F were made prior to Jardine's filing date in 1920, or afterwards, for that matter. It is said that witnesses for the respondents testified that this Exhibit F piston was made by Aluminum Company of America in 1920. No reference to the record is cited—probably because the only thing the Aluminum Company of America did was to make castings and whatever evidence, if any, there is upon the subject to which counsel refers, it does not show that the Aluminum Company made any castings used to make Exhibit F pistons prior to Jardine's filing date on March 11, 1920.

Other claims of supporting evidence for an alleged date of the Exhibit F prior to 1921 are presented in petitioners' brief beginning at page 17 where this Ex. F piston is illustrated. The reference to Dr. Jeffries' testimony at page 987 of the record shows that he gave no date regarding the time that Exhibit F was used. There is no evidence that the castings which he said the Aluminum Company of America made for the Long pistons (R. p. 940) were for pistons like Exhibit F or were used for that purpose. As a matter of fact, they were castings which might have been machined into one of several of the Long pistons.

The question and answer quoted from Mr. Stellman's testimony at the bottom of page 18 of petitioners' brief is not to the effect that Exhibit F was in existence in 1916, but that at that time Long showed him a piston, according to Stellman's recollection, which had a rib in it like that shown in Exhibit F "in a general way." Other pistons had such a rib in them at that time. At record page 986 Dr. Jeffries did not testify that the Long piston was the first split piston in commercial use. He said that he did not know that he knew of any which preceded it. He was not referring to Exhibit F. In fact, there is no evidence to which Long piston he referred, but he did say it was no solution of the automotive piston problem (R. p. 986). Venner's testimony regarding the Long pistons was purely oral and he was so uncertain about the particular piston that he had in mind at any date that he referred to them as a "type." For example, at page 349 of the record, he said:

> "F is the same *type* of piston that Mr. Long showed me in 1916."

Of course, F is the same *type* as each and any of the Long pistons, depending upon the witness' conclusion. Venner may have seen any one of the Long pistons in 1916, and in 1934 testified that it was of the same *type* as some other

Long piston. This is the kind of evidence the petitioner asks the Court to accept as proving the Long date beyond a reasonable doubt. The reference to the testimony of Chadwick at page 378 of the record shows that the questions seeking to induce him to give a date to Exhibit F were grossly leading, that the answers were based upon opinions, and with the warning that

> "*I won't say* I know of any of these pistons, like Exhibit F, being made at the time that I came with Mr. Long in December, 1918. *It is pretty hard to go back at that time to be exact as to the exact design.*"

Thus does the witness warn everybody of the unreliability of his memory among the various Long piston design over fifteen or twenty years.

The next record reference, pages 338-341, were undoubtedly intended to be 438-441. If so, they refer to the testimony of Royalty who also warned everybody of the unreliability of his memory among Long's numerous types after fifteen or twenty years (R. p. 444). Even in the discussion of the pistons at the pages referred to by our adversaries, Mr. Royalty protects himself against a mistake by referring to the pistons as "the same *type* of piston," which might mean any Long piston since they were all of the same *type,* depending upon the opinion of the witness.

The next reference is to testimony of Stellman regarding some tests that the Franklin Company made on a Long piston in March, 1919 and to a report of that test at page 1629 of the record. This was the earliest report that he could find (R. p. 467). The report says nothing about which Long piston was tested and the best that petitioners' expert, who knew about the tests, could say to help counsel was that the piston employed was "*similar* to Exhibit F." Of course, the piston shown in the Long patent 1,872,772 is "*similar* to Exhibit F," so that the piston tested in March, 1919 by the Franklin Company might have been any of the Long pistons since all are *similar* to Exhibit F.

It must be remembered that Mr. Stellman was not only serving as petitioners' expert, but had been hired to look up evidence for petitioners (R. pp. 462 and 465), and that, therefore, he was to be expected to aid the defendant as far as possible. His claim that this March 1919 piston was no more than of the *type* of Exhibit F therefore damns the plaintiffs' proposition with faint praise. Unless Mr. Stellman had something to hold back, he would have said it was identical with Exhibit F. There is no need for us to answer here the claim that it was Exhibit F that was used for replacements in April, 1920 and for production in November, 1920, because those dates are subsequent to Jardine's filing date and would, therefore, be immaterial, if true. There is, however, no proof that the Long piston so used in either instance was Exhibit F, except of the nature we have discussed. The piston there used is referred to by Mr. Stellman as "those Long *type* pistons" (R. p. 456) which "I should say" were "*similar* to type F" (R. pp. 456-7). Here again the injection of the witness' opinions and conclusions where he, as the expert and evidence hunter for the defendant should have been positive, imply, if they do not prove, the contrary of petitioners' contention.

Proceeding on pages 20 to 23 of the petitioners' brief, confusion upon confusion is caused by reference to Long pistons which were not Exhibit F with the inference that they were, and to expressions of opinions by the witnesses as to types, similarities, etc. as if they were positive statements, and all subject to the further criticism that they were purely oral statements made from fifteen to twenty years after the time to which they referred and all relating to the confusing numbers of different designs of Long. The testimony of Mr. Murphy at page 654 of the record is referred to. Mr. Murphy was plainly talking about the piston of the Long patent 1,872,772, and not about Exhibit F. He says that in the 1919 test of this piston it "froze in the cylinder and was pretty badly damaged" and, fur-

ther, that they continued the tests upon those pistons (still referring to the piston of the Long patent 1,872,772) through 1919 and to what extent in 1920, he did not know. This could tend to clear up the character of piston that was used in the 1919 tests referred to by Stellman and a report of which is found at page 1629 of the record and also explain the reason why defendant's expert would go no further than to use the word "similar" to each, when he was guessing at what piston was used in this test. Further reference is made to Mr. Murphy's testimony at page 61 of the record where he continued to talk about the piston of the Long patent. When confronted with Exhibit F he said "I can't say that the piston I just spoke of differed at all from Exhibit F." He thought it was of the same type as Exhibit F, but that it differed somewhat, though of general shape. This would be a description of the piston in the Long patent.

Mr. Castor's testimony is of the same character. He uses the word "type" of piston where he should, if petitioners can carry their burden, refer to the exact thing. He says he first saw a piston like Exhibit F in 1920. He did not say he saw it before March 11, 1920. He said he did not see the type in 1918. He was uncertain, saying that he might have seen the Exhibit F "type" in 1919, but he would say that he first saw it in 1920. This testimony is indefinite both as to date and as to piston because the piston shown in the Long patent 1,872,772 is of the type of Exhibit F and was in existence in 1919.

When counsel pressed the witness Burns for a commitment as to Exhibit F, the best the witness could do was to testify as follows (R. p. 687):

> "Q. Was it or was it not like Exhibit F, that type B? A. Well, it was a strut type piston."

Many of the Long pistons were strut type pistons, including the one shown in the Long patent 1,872,772. At page 685 of the record, when pressed on the same subject, he

said he would not say that it was that piston that was used in the 1919 tests or he would not say it wasn't. He said he would not say the relief was on there or was not on there.

As we have said, the patterns and core boxes mean nothing because these could have been used, and were used, to make castings for other types of Long pistons than Exhibit F. As counsel say, the castings were machined after they were made and the patterns and core box give no guide as to how they were machined. They might have been machined like any one of several of the Long pistons. It is not helpful to record when these patterns and core boxes were taken out and used because if we knew what kind of castings were made from them there would be no way of knowing how the castings were machined. The inventories of Long pistons are not helpful because they do not say what Long piston is referred to in these inventories. Nobody doubts that the Long piston, Exhibit F, shown in the December, 1921 Motor World was provided with a relief, but that does not establish the use of the combinations employing the relief prior to Jardine or make that combination identical with Jardine in either structure, mode of operation or results.

Elsewhere in this brief we have shown how counsel, in discussing the clearance employed on the Long pistons, has omitted to say that the use of the Long piston at .002" clearance was experimental and that at such clearance they failed, and that their use commercially was two and one-half times that clearance, which was not only no solution of the problem, but a conclusive concession of failure; indeed, no concession of failure could be more conclusive than that which resulted from tests made by so substantial a concern as the Franklin Company was at that time.

The claim that Stellman testified that the Long pistons went into service at from .002" to .003" clearance is incorrect, and the references to the record to support it

do not support it. On the contrary, Mr. Stellman testified that they gave these Long pistons the clearance of .004" to .005" (R. p. 458). This is not only supported by the service bulletin of the Franklin Company (R. p. 1590), but by the testimony of Mr. Castor of the Franklin Company (R. p. 672).

It is thus apparent that the careful study and conclusions of the Court of Appeals on this subject are challenged by discussions of evidence relating to other Long pistons than Exhibit F, as if that testimony related to Exhibit F. Statements are made in petitioners' brief that the witnesses were referring to Exhibit F when a reference to the record shows that they were referring to pistons which they said were no more than pistons of that type, or *similar* to Exhibit F, and often with the qualifications that they did not know whether it was or was not, and that their memories were not good over the years.

The record is full of collateral statements by witnesses which negative any contention that this Exhibit F Long piston was in use prior to Jardine's filing date. Anyone who has observed witnesses testifying knows that these side remarks, made often without knowledge of their bearing upon such questions as the dates of the Exhibit F Long piston, are a safer guide than oral guesses made in the interest of the parties who call the witness. Thus, at page 463, of the record, Mr. Stellman, defendants' expert, testified that the Long piston had not proved satisfactory in production prior to April 8, 1920. This was about a month after Jardine's filing date, so that if Exhibit F were a successful piston, as counsel contend, it could not have been in existence prior to Jardine's filing date for the obvious reason that at that time still no Long piston was successful.

The application for the Long patent 1,872,772 was filed March 7, 1919. This application does not show the piston Exhibit F as illustrated in the 1921 Motor World. If, as

is now contended, the tests of the Franklin Company in March, 1919 had employed Exhibit F, certainly Exhibit F would have been shown in the application from which the Long patent 1,872,772 issued. Contrary to petitioners' statement (P. B. p. 23) that there is "no specific statement of a relief in the Long patent 1,872,772," the relief 12 is shown and numbered in the patent and is described in lines 63 to 67 of the patent (R. p. 1737). That relief, however, is of a different kind from the relief of Exhibit F and the internal construction of the piston is different.

We think the following questions and answers brought out by cross examination of Mr. Stellman, defendants' expert, clears up not only what was meant by the Long "type" piston, but establishes conclusively that the piston which the Franklin Company used commercially was not the piston, Exhibit F, shown in the 1921 Motor World, but the piston of Long patent 1,872,772 (R. p. 548):

> "XQ. *Did the Long type mean the one shown in this Long patent 1,872,772?* A. *Yes.*
>
> "XQ. *That is, it was the type of Long piston that was used commercially by Franklin at that time?* A. *Yes.*"

This evidence also establishes the fallacy of petitioners' effort to convert the indefinite language of the witnesses regarding "type," "similarities," etc. to mean Exhibit F, where the piston of the Long patent 1,872,772 was meant by the witnesses.

It thus clearly appears that where it was thought necessary to do so, to challenge the finding of the Court of Appeals, petitioners have not hesitated to resort frequently to the following:

(1) to make statements that are clearly contrary to the record and which have been so often discussed as to make mistake most improbable. Such a statement is the declaration that Long was used at .002" clearance when the record repeatedly shows that such use was merely

experimental and failure, and that the commercial use was at .004" or .005" clearance.

(2) to half-truths such as stating that the witnesses referred to Exhibit F when they testified no more than that they were referring to pistons of that type, or pistons similar thereto which may have been the piston of the Long patent 1,872,772 or some other Long piston and most probably were, in view of Mr. Stellman's testimony quoted *supra* (R. p. 548).

(3) reference to the use of patterns, castings, etc., as if they were peculiar to Exhibit F, whereas they could have been, and were, used for other Long pistons.

(4) asserting the testimony of witnesses regarding these Long type of pistons fifteen or twenty years afterwards as if the witnesses were positive about their statements, when the witnesses themselves warned that their memories were unreliable upon these subjects after so many years and all this even after they had been coached to the point of telling them not to talk to the respondent before going on the witness stand.

Certainly a case must be a "hard case" to warrant making such bad law as would hold that a thing was proven beyond a reasonable doubt by such evidence under such circumstances. No matter how hard a case it may be thought that the association of the Aluminum Company of America in the premises or the ownership of the patent by the trustee-plaintiff makes out, such a case is certainly not hard enough to justify making such bad law.

The testimony regarding the use of the Long pistons was adduced by deposition. Although Mr. Stellman, the defendants' expert, appeared before the Master for the purpose of experting the case, his fact testimony regarding the Long pistons was taken by deposition. It results that all the evidence regarding the Long pistons and their alleged uses was adduced out of Court and the Master did

not see and hear the witnesses who gave the testimony. If it shall be held that his view differed from that of the Court of Appeals, it is well established that since the Master did not see and hear the witnesses, his conclusions in this Court are entitled to no more weight than that of the Court of Appeals. Indeed, in the particular circumstances of this litigation we think the analysis of the testimony by the Court of Appeals as conclusive thereon, is more reliable than that of the Master because of the superior experience of the Court of Appeals in such matters.

It is well established that the high credit to be given to the conclusion of a trial Court in the analysis of testimony is based entirely upon the seeing and hearing of the witnesses by the trial Court, and where the trial Court did not see and hear the witnesses, but sat, in fact, as a reviewing Court on the evidence, no more credit is to be given to the conclusion of the trial court than to the Court of Appeals. *Louisiana v. Mississippi,* 282 U. S. 458, 465; *Midland v. Bobbitt,* 70 Fed. (2) 416, 420 (C. C. A. 8); *The Marsodak,* 94 Fed. (2) 339, 341 (C. C. A. 4); *Grove v. Brewer,* 103 Fed. (2) 175, 179 (C. C. A. 1).

We think the analysis of the evidence establishes indubitably that Long did not have the (Ex. F) 1921 Motor World piston until after Jardine's filing date. However, it is not necessary for us to establish this fact. It is necessary for the petitioners to establish it "beyond a reasonable doubt." The authority on this subject is well established by decisions in this Court ancient, intermediate and current. Indeed, it may be fairly said to be established that such a proposition cannot be proved without supporting documentary evidence. Here, as we have said, there is no documentary evidence earlier than the 1921 Motor World. The latest pronouncement on this rule of law is probably sufficient. It appears in *Smith v. Hall,* 301 U. S. 216 where Mr. Justice Stone, speaking for this Court, said (p. 222):

> "*This oral testimony,* if taken at its face value, would show that the Smith method was used in the Brooklyn incubator with eggs in staged incubation. *But without corroboration, it is insufficient to establish prior use, Barbed Wire Patent,* 143 U. S. 275, 284; *Deering v. Winona Harvester Works,* 155 U. S. 286, 300; *Eibel Process Co. v. Minnesota & Ontario Paper Co.,* 261 U. S. 45, 60, and we turn to *the documentary evidence* that Hastings knew the method of the patent and used it in his Brooklyn structure."

Here the Court considered the oral testimony was not sufficient to establish the prior use without corroboration, so turned to the documentary evidence. In the instant cause there is no documentary evidence to turn to.

(7) Unless it be held that Long's Exhibit F, 1921 Motor World piston is prior to Jardine, what we say in sections (a) to (d) following is unimportant. If, however, the Court considers that the evidence shows that this Exhibit F is prior to Jardine, then we show:

(a) It will be remembered that the Long patent 1,872,712 discloses a piston with a rigid web and fails to disclose flexible webs (108 Fed. (2) 114). To this petitioners agree (P. B. pp. 5 and 54). Petitioners, however, assert often and loud that the slight change in Exhibit F over the patented piston made the webs of Exhibit F flexible. As the change was not in the webs or in the parts supported rigidly by the webs, the fallacy of this contention is apparent upon mere observation. However, since effort is made to assert the contrary, it becomes necessary to consider the proof relied upon to support the contention.

At the threshold, petitioners find nothing upon which to place reliance except what is admitted to be the unwinding of "a double negative" in the testimony of Dr. Jeffries (P. B. p. 49).

It is well established that the burden is upon the defendant to prove "beyond a reasonable doubt" that a prior art device operated like the patented device (*Coffin*

v. Ogden, 18 Wall. 120; 85 U. S. 120); it at once becomes apparent that a conclusion that petitioners arrive at by an effort on the part of their counsel to unwind a double negative in the testimony of a witness is perhaps less reliable than any proposition ever submitted to establish this point beyond a reasonable doubt. When counsel tangle the witness up in a double negative, the witness's meaning of his answer probably depends upon his attitude toward grammer and syntax. It is apparent that the question was so asked as to invoke the answer which resulted in a double negative so as to enable petitioners to give either meaning to the answer. If, in these circumstances, it becomes important to consider the matter further, we point out that the subsequent testimony of the witness shows that the answer which petitioners claim to arrive at from the unwinding of this double negative is erroneous, and immaterial, if correct, for the witness went on to testify (R. p. 1010) that "the Long pistons were not satisfactory," and that those who were in touch with them at the Franklin Company "would come back with repeated tales of how they weren't satisfied with their (the Long) pistons," statements depicting situations manifestly contrary to a conclusion that the Long webs flexed in use.

Since all of the Long pistons used by the Franklin Company, including Exhibit F, had to be used at clearances from .004" to .005" because they set up or seized at .002" (R. pp. 1438, 1439 and 1590) the slight change in Exhibit F over the patented Long piston did not result in making the webs flexible as it is apparent such a change would not do.

Since the Long patent 1,872,772 had described the web as lacking flexibility as is conceded (P. B. pp. 5 and 54) and as designed and functioning to hold its supporting skirt portions "rigidly" "against bending" nothing that Dr. Jeffries said should be construed to mean anything else (p. 1738). Certainly Dr. Jeffries could not change those facts and, if there were in fact any ambiguity in the dis-

entangled double negative, it should be construed as not changing the truth as Long had thus stated it.

Another trap for the auditor in the double negative and its unwinding is to be found in the fact that at the time the witness gave the answer to the question, which was pregnant with the double negative, the parties were talking about the flexibility of the piston under pressure excited by a specially designed clamp (Exhibit 3-I) and that the question and answer as to whether the Long piston was flexible or not have, as like as not, reference to its performance in this clamp and not to its performance in an engine cylinder. It would, of course, be immaterial if the webs of this Exhibit F were flexible under the clamp and, at the same time, not flexible enough to yield to the pressure exerted in the engine cylinder under the necessary clearance of .002" before seizing. In other words, the Court is asked to believe, when the double negative is unwound, that the witness testified that the webs of Exhibit F were flexible under the pressure of the clamp and, therefore, they were flexible enough to operate in an engine cylinder at .002" clearance when the experience with the Franklin Company found that this was not true and, as a result, had to use them from two to two and one-half times that clearance. Furthermore, the Court is asked to believe that this evidence establishes beyond a reasonable doubt that the operation of Exhibit F with regard to flexibility of web was the same as that of Jardine. We do not know how anybody can expect a Court to come to any such conclusion in view of what this Court said in *Smith v. Hall, supra.*

(b) Before this Court's decision in its former review of this cause (305 U. S. 47; S. P. B. p. 47), it was the law that neither a patentee nor a prior art person was required to know or explain the scientific principle upon which his invention worked. For example, with respect to the patentee, there is *Eames v. Andrews,* 122 U. S. 40, 56, and for the prior art person there is *de Forest v. G. E.,* 283 U. S.

664, 686, relied upon by the petitioners at page 45 and 46 of their brief. On the former review we urged that the flexing of the web was the scientific principle upon which the web operated and that under the rule in *Eames v. Andrews* neither Gulick nor Maynard was required to explain that principle. Such had been the view of the Court of Appeals below, the Court of Appeals of the District of Columbia and the Court of Customs and Patent Appeals. This Court, however, ruled against us.

We have already cited the authority of this Court to the effect that the rules regarding disclosures in patents in suit and prior art are the same (see authorities cited page 24, *supra*). Manifestly, as we have pointed out, they could not be different, as illustrated by the example in this very litigation under which the Gulick and Maynard patents would have to be construed one way as patents in suit and another way as prior art, an inconsistency intolerable under any administration of the patent, or any other branch of law. The ox which the petitioners succeeded in creating on the first review has come back to gore the petitioners, who, now, under the authority of *de Forest v. G. E., supra,* seek to excuse the failure of Long to describe the flexibility of his webs, if they were flexible. Indeed, petitioners go further in that they seek to have the Long webs, which are admittedly not flexible under the only description of them, held to be flexible. The excuse given for this is that it is not necessary that there be an explanation of the scientific principle of web flexing in the prior art. In other words, this Court is asked to take the position that the failure of Gulick and Maynard to explain the scientific principle of flexibility was insufficient to meet the requirements of the disclosure of a mechanism in the patent law, but notwithstanding the same omission by Long still it is sufficient for Long. Correlating this to Gulick or Maynard, this Court is asked to rule that the disclosures in Maynard and Jardine were insufficient as patents in suit to teach

those skilled in the art, but would be sufficient as prior art to teach those skilled in the art, the intolerable inconsistency in law or common sense to which we have referred. We are frank to say that we still think this Court was in error in its first decision, but since that is now the law of this case, we do not see how it can be applied inconsistently to aid the petitioners in both cases. Not even a "hard case" would justify such a practice.

It is no answer to this to say, as petitioners do, that the patent statutes do not say that the scientific explanation of a prior known or used or sold device must have been known to anybody because likewise the patent statutes do not say that the scientific explanation of a device covered by a patent in suit must have been known to anybody, and they are so interpreted by a long line of decisions of this and other Courts, including *Eames v. Andrews, supra.* If anything, the decisions are more strict in the case of the prior art than of the patent in suit because of the temptation to, and the large number of cases in which effort has been made to, read incorrect scientific principles into prior art devices through the *ex post facto* wisdom of those who are brought to bar as infringers of a patent. With a little bit of hindsight imagination, and a normal amount of vanity, anybody could make an invention after it has been made or could have found it in a prior art disclosure where he could not have found it before.

It follows that if web flexibility is a scientific principle in a patent in suit, such as Gulick and Maynard, it is a scientific principle in the Long piston, and that unless the concurring rules in *Eames v. Andrews* and *de Forest v. G. E.* are changed to destroy the present consistency between them, and to create another technicality upon which a meritorious inventor may be tripped up, flexibility can be no more read into the Long piston than into the Gulick and Maynard pistons by expert evidence to the effect that the webs are flexible, which evidence was adduced at the

trial. An outstanding difference is that both experts furnished the evidence supporting the web flexibility in the Gulick and Maynard pistons and there is no evidence to support any flexibility in the webs of the Long piston except the conclusion which undertakes to unwind the double negative, and if that be accepted, nothing is established except that the web is flexible, perhaps under the power of the clamp, as against the evidence that in actual use it was not sufficiently flexible to operate at the desired clearance.

Attempt is made to lay a foundation for the Court making this distinction and changing the consistency between the rules in *Eames v. Andrews* and *de Forest v. G. E.* by claiming that, although it was not known that the webs of the Long piston were flexible (perhaps under the clamp), it was always possible to reproduce the Long piston, Exhibit F, and flex it (under the clamp), and, therefore, a distinction should be made between a prior use device and a prior publication such as the Gulick and Maynard patents. This also is fallacious, for it is a good deal easier to produce a device from a drawing than from a specimen and, to common knowledge, drawings are almost universally used in making and reproducing devices in preference to a specimen itself. Moreover, in the instant case the evidence rebuts any such conclusion as petitioners suggest because the faults of the Long piston, including the necessity of using it at from two to two and one-half times the desired clearance were commonly known to such skilled engineers as those of the Franklin Company. Many were the complaints about it and many were the efforts to try to modify it to reduce this clearance, including those made by Mr. Long himself. During all of this trial and effort and failure, no one saw that the Long piston webs were flexible enough to achieve this desideratum, if they ever were, though the Long pistons were before them ready to be duplicated, as counsel contend they might have been.

(c) The Court of Appeals rightly relied upon the rules of law that prior accidental performance or prior

unrecognized performance could not be resurrected to anticipate or limit a later inventor. If Long ever produced any webs which were flexible at all, or flexible enough, neither he nor anybody else recognized either of these propositions. This is evidenced by the absence of all suggestion that the webs are flexible in any Long documents, including the 1921 Motor World, and by the description in the latest Long patent relied upon (1,872,772) of webs which are rigid, but by the stream of efforts to improve the Long pistons, including those made by Long himself without anyone making the webs flexible prior to Jardine, if at all.

There is still another rule of law in this connection and along this line which the Court of Appeals might have relied upon, and that is the rule that patent protection is not always to the first inventor, but to the one who benefits the public by teaching the public what the invention is and how to practice it (*Gayler v. Wilder*, 51 U. S. 477). It cannot be said that Long taught the public either web flexibility or the advantage of web flexibility if no one knew that Long had web flexibility prior to the trial of this case, which knowledge at the trial is the most that petitioners contend, even if the Court accepts their conclusion of the unwound double negative or if it is important that at that time it was recognized that the Long webs were flexible under the clamp.

Unless, therefore, we are prepared to apply one rule to the same set of facts in connection with Gulick and Maynard and another rule with respect to Long, the claim that Long had flexible webs must fall with the former decision of this Court in this litigation, and if we do apply different and inconsistent rules to Gulick and Maynard, on the one hand, and Long, on the other hand, all that would have been established would be that in 1934 it came to be known that the Long webs were flexible, perhaps, under the pressure of the clamp, which furnished no information as to their performance or behavior in the engine cylinder and did not change, in any way, the fact that that performance was

such that the piston could not do what the Jardine piston did from which it is inevitable to conclude *that Long was right in describing the piston as having webs which were rigid in the only description that was ever written of the piston.*

(8) Re the Unwinding of the Double Negative: Petitioners have made so much of the double negative occurring in the question and answer of Dr. Jeffries at pages 1009 and 1010 of the record as to warrant the conclusion that petitioners seek to fight these law suits on this double negative battlefield. To wage so important a contest and seek its answer upon such a narrow field would not only be quibbling, but would be ironical. After all, the Long web is only one element of the Long combination, as the Jardine web is only one element of the Jardine different combination, and even if the description in the Long patent and all of the other evidence on the subject were ignored and it were held that the answer to the enigma of the double negative was that Long's webs and Jardine's webs were alike, that would not make the combinations the same. The combinations would still be different, the modes of operation would still be different, and the results would still be different. Not only are patent cases not to be decided upon such meager and trivial questions as comparisons of single elements, but they do not ultimately rest upon comparisons of combinations but upon the more substantial ground of the performances of those combinations. There is not a word of evidence in this record to support a claim that the performance of Long's piston is the same as Jardine's piston whether Long's webs are flexible or not.

As reluctant as we are to descend to quibbling upon such a narrow field, we suppose it is incumbent upon us to say how we think the double negative ought to be unwound and what was meant by the witness, as if it would make any difference what one witness meant in answer to a double negative in view of the undisputed testimony that

Long had to be used at twice the desired clearance because he could not be used at the necessary clearance, and in view of the clear description in the Long patent under which his webs are and must be rigid in use.

To begin with it must be remembered that mere flexibility in a web is not sufficient. The flexibility must be such that the web will yield before the pressure becomes great enough to cause the piston to stick in, or score, the cylinder wall. Mere flexibility is unimportant. Most anything is flexible—a crow bar is flexible, for example—but both crow bar and Long webs would not flex within the limits necessary to prevent the seizing and scoring. Long so described his webs in his patent, whereas Jardine described his very clearly as bending under the reaction force of the cylinder walls (R. pp. 1296, ll. 22-25, for example).

Perhaps a little analysis would help in this hair-splitting dispute of whose theory as to the answer to the unwinding of the double negative is the correct one. Perhaps a little consideration of the background of this question and answer would be enlightening. It must be remembered that counsel and witness were engaged in one of those rapid-fire question and answer controversies that more often lose than find the facts. Such a controversy more often becomes a private contest for dominancy in a colloquy than an effort to ascertain the true facts upon which justice can be reached. Moreover, the issue was confused by the fact that sometimes the colloquy was about the flexing of piston parts in cylinders and sometimes under a clamp, in other words, whether or not the webs would flex in a cylinder and again whether or not they would flex under a clamp which exercised many times the pressure at which the piston would stick in the cylinder.

The witness was insisting that the Long piston had, to his knowledge, been unsatisfactory and there had been constant complaint about it, that it was not better than a trunk type of piston and had had a short life. Opposing counsel was trying to oust the witness from these positions. Coun-

sel had pursued the witness through what amounts to about a dozen printed pages in the record (R. pp. 986, 995, 998, 1002, 1006-1010). All during this examination the witness stood his ground, giving the following questions and answers (R. p. 986):

"Q. You regard the Long piston, then, as not being any solution to any problem? A. *It is not a solution to the automotive piston problem, no.*"

* * * * * *

(R. p. 996):

"Q. Well, whether you had relief or not, the skirt would expand in the region of the wrist pin bosses more than at right angles to it? A. Yes, it would.

"Q. And it would begin to wear down, wouldn't it? A. *It would bear against the cylinder there.*"

* * * * *

(R. p. 1007):

"Q. Now, turning to the Long patent 1,872,772, one of your objections to this patent was it was too complicated. Is it more complicated than the Gulick patent structure? A. It is perhaps not more complicated in its structure, *but it is more complicated in its operation.*"

* * * * *

(R. p. 1009):

"What do you think caused that (rubbing) in Exhibit F, the sand cast piston? A. Well, it is a combination of clearance and temperature, has been such that the wall pressure has been high during operation in Exhibit F, and there is no evidence of very high wall pressure in Exhibit E. *I have seen many trunk type pistons with no slots at all that have the same kind of surface as Exhibit E.* Among other things, it is a matter of how much clearance the piston is given and the effectiveness of the lubrication.

"Q. As a matter of fact, the hard rubbing opposite the webs was caused by the fact, really, that *the webs expanded out and pushed that cylindrical part against*

the cylinder, isn't that right? A. *Yes.** But in order to do that the webs had to become quite hot, or the clearance of the piston had to be relatively small."

It was at his point hat counsel chanced the double negative question. The interrogating part of the question which for simplicity we divorce from the other part was as follows:

"What do you say, do you think the webs weren't flexible *enough*?"

The direct answer was:

"No."

Nothing in our minds could be clearer than that what the witness meant was that the webs of the Long piston were not flexible *enough* for use in an engine. If there could be any doubt upon this question it is explained by the preceding questions and answers which were to the effect that one of the Long pistons then in the hands of the witness which had been used showed rubbing opposite the webs from which the witness had testified that he had seen the same results from the performance of trunk type pistons which did not have any slots or any flexibility in them at all. All of this, of course, had reference to the operations of the piston when in use in a cylinder. If this conclusion needs any support other than what went on before, such support is found in the testimony of the witness following the question and answer to the effect that "the Long pistons were not satisfactory" and there were "repeated tales of how they weren't satisfied with the pistons" (referring to the Franklin Company).

The witness added to his negative answer the statement "there is flexibility in the webs." This, of course, did not change the answer that the flexibility was not *enough* for use in a cylinder; it merely added what is

* If the webs had flexed this wouldn't have happened.

perfectly obvious to anyone, that there is flexibility in the webs if you put enough pressure on them, just like there is in a crowbar. In view of the discussions of flexibility in connection with the clamp, the addition was necessary in order that counsel could not contend that the witness had said the webs were not flexible, whereas it could be shown that they were flexible under the clamp, for example, as was done in connection with other pistons. Even, however, if counsel's interpretation of the witness' statement "there is flexibility in the webs" be accepted, it cannot be divorced from the qualification "*enough*" found in the question, because the answer was not to a question asking if the webs were flexible, as counsel argue through their brief, but as to whether they were flexible *enough*. That the answer is negative to the question is not only clear from the common usage of a negative to such a question, when the negative is meant, and the consideration of the qualification which we have pointed out in the question, but the truth of an answer to the effect that the Long webs were not flexible *enough* is not only consistent with the balance of the witness' testimony, but with the testimony throughout the record, including that of the defendants' expert to the effect that the Long piston had to be used at double the desired clearance for the reason explained in the Long patent that the webs function to hold the skirt parts rigidly against the cylinder wall.

Therefore, the answer to this dialectic contention is that the witness said that the Long webs were not flexible *enough*, and that whether he said it or not, it is established not only by the other parts of his testimony to which we have referred, but the testimony of the other witnesses, including defendants' expert. It would not matter whether he meant that they were not flexible enough for engine cylinder, clamp, or crowbar use; his answer was that they were not flexible *enough*.

That Jardine's webs are flexible enough to bend under the pressure exerted by the cylinder walls before the pis-

ton will seize or stick is described repeatedly and at length in his specification. A number of times he says that he starts with and maintains a small initial clearance. He says his piston is deformed and deflected under the conditions of use without interfering with the essential functions of the piston. He says in the preferred form the webs bend in operation. Then he says (p. 2, ll. 22-25):

> "Thus the reaction force of the cylinder wall on the outer faces of the guide segments as the piston expands tends to cause bending of the web 6 along the said lines 13."

Then he goes on to say that with the bending of the webs the piston undergoes considerable thermal expansion without changing the small initial clearance and without scoring or seizing of the piston. Then, beginning line 89 on page 2, he expands upon this description, telling how "the reaction force of the cylinder wall on the outer faces of the guides" will even when there is a "relatively large thermal expansion" maintain this small clearance based upon the displacement which has previously been described as effected in part, at least, by the bending of the webs. He then tells how this can all be compiled.

The only description that Long furnishes of his piston is antithetical of this description. Long says in patent 1,872,777 (R. p. 1738) that his webs hold the separated portion 6 "outwardly against the forcing thrust of the connecting rod." He goes on to say, beginning line 32:

> "Inasmuch as the separated portions 6 will be *rigidly held against bending* against the forcing thrust of the piston from the connecting rod of the piston, the dividing slanting slots 7 of the pairs of separated portions 6 will prevent the wearing of a raised portion in the cylinder wall."

Here very plainly and definitely are descriptions of antithetical modes of operation in Long and Jardine. The evidence shows that as a result of these different modes of

operation the Jardine piston was a success at and the Long piston was a failure at the .002" clearance.

In these premises how trivial and unimportant becomes petitioners' effort to try to construe a double negative occurring in a single question and answer to mean something contrary to these clear descriptions of the operations in the two patents and the many pages of record supporting them.

Moreover, all this attempt to claim flexibility in the Long webs is repudiated by defendants' expert who testified that all the Long pistons Exhibit F, Exhibit E, Exhibit G, and that in the patent 1,872,771 were essentially the same in construction and principle (R. pp. 491-492). Since the patent 1,872,772 describes a web that is rigid petitioners are unhorsed by their own expert.

(9) On page 59 of petitioners' brief it is assumed that if Long did have flexible webs the claims of Jardine are invalid over the Long commercial piston.

There is nothing in the evidence to support such a conclusion; all the evidence is to the effect that there was lack of identity in structure, operation and results between Jardine and Long, no matter what were the characteristics of the Long webs (R. pp. 938-940, 986, 996, 1010).

The claims of Jardine recite other elements not found in Long. For example, claim 11 recites a skirt "cut away to expose substantially all of the sides of the web." This is not present in Long since the skirt of Long is not cut away to expose the webs in any of Long's pistons. Also "wrist pin bosses in the webs"; in Long the bosses are in the skirt and webs. Also "webs integral with the flange" of the piston head; in Long the webs are connected through the bosses and the skirt to the head flange.

These features of structure determine differences in operation and results; they also determined the difference between success in Jardine and failure in Long.

Petitioners' Inconsistency on this Review and on the Former Review is illustrated by the following at page 56 of petitioners' brief:

> "With such flexing webs known as familiar elements, as found by this court, *those skilled in the art would naturally have proceeded to make the webs of the Gulick* and Long patents *flexible*, if such web flexibility were desired."

In the first review, petitioners urged and induced this Court to accept the proposition that the Gulick patent did not teach those skilled in the art how to make the Gulick webs flexible, and for that reason this Court held that Gulick did not comply with the patent statutes which required a patentee to do no more than disclose his invention so that it could be reproduced by those skilled in the art. Nothing could be more inconsistent either with the petitioners' position on the former review and this Court's ruling on the former review than the above claim that those skilled in the art would naturally have proceeded to make the webs of Gulick flexible.

Now, in this cause, when petitioners desire to use Gulick and Long as prior art, petitioners have no hesitancy in saying that those skilled in the art would naturally have proceeded to make the Gulick and Long webs flexible.

Of course, the truth of all this is that those skilled in the art would naturally have proceeded to make both Gulick and Long with flexible webs.

We say this with all deference to what this Court said on the first review, but we still believe that we were right then and refuse to be inconsistent (we, like the Court of Appeals, accept here this Court's conclusion), *but the truth is, however, that one skilled in the art following the teachings of Gulick would have made the webs flexible enough to operate in a cylinder (and this is true of Maynard likewise), but in following the teachings of Long it would have been necessary to make the webs so rigid that they would not operate in a cylinder, though they might*

under a clamp, in order to preserve the desiderata of ruggedness and durability where a piston was cut up into six sections, four of which had no other support than through the webs, as Long did in both Exhibit F and the piston of his patent 1,872,772. Shorn of all preceding rulings, and all preceding contentions, those are the plain facts of the case—so plain that we repeat them. The Gulick disclosure is sufficient to teach those skilled in the art how to make a piston which would not only be flexible in the cylinder so as to maintain the narrow clearance of .002", but is rugged and durable. The same is true of Maynard, as was proven by the use of millions of such pistons under conditions which established the presence of all of these properties. The same is not, however, true of Long because anyone skilled in the art following the teachings of Long would necessarily make the webs so rigid as not to be flexible to prevent seizing at .002" clearance, in order to preserve the necessary ruggedness and durability of the six-sectioned Long piston to make it commercially useful, as shown by the fact that that is precisely what the Franklin Company did when it submitted to the .004" or .005" clearance in order to prevent sticking, to preserve ruggedness and durability, but with the result that they had to submit to the other set of evils, including the slapping of the piston.

But be the truth as it may, in no event do we think that one premise can be followed on the first review with respect to Gulick and the opposite premise be followed with respect to Long in this cause, the latter in total disregard of such necessary properties as ruggedness and durability.

The attack on the patentability and commercial use of the Jardine piston included under Point II in defendants' brief we reply to in our point (a) which follows.

POINT III.

WHETHER THE ALUMINUM COMPANY OF AMERICA SHOULD HAVE BEEN JOINED AS A PARTY PLAINTIFF FOR INJUNCTIVE RELIEF IS THE ONLY DOUBTFUL QUESTION IN THIS CAUSE.

In the decrees entered in these causes on the mandate of the Court of Appeals, issued after its first decision, it was held that the recovery against each of the petitioners would be so slight as not to justify an accounting, so nominal damages of One Dollar ($1.00) were awarded in lieu of profits and damages. This left injunctive relief the only relief of any value.

The Aluminum Company is an exclusive licensee to a particular field, i.e., the aluminum piston field, as counsel for petitioners say in their brief. The Jardine patent is, as the Court of Appeals said, dedicated by the patentee to the light weight metal field (Jardine patent, p. 1, lines 3, 5, 13-28; R. p. 2195).

We cannot dispute the fact that for all practical purposes the light weight metal, or light weight alloy, field is the aluminum piston field, and the Jardine piston has never been, and probably never will be, used or have any utility outside of the aluminum piston field, which is the field covered by the exclusive license to the Aluminum Company. We cannot fairly challenge petitioners' claim that the fields not covered by the license of the Aluminum Company are moot, and that the license, therefore, is, in effect, and for all practical purposes, a license to the entire field and the entire monopoly as far as that monopoly has any utility. It must also be conceded that if the Jardine claims were read in the light of the parts of the specification to which we referred, they must be limited for all practical purposes to aluminum pistons.

We are, therefore, confronted with a set of facts new to any cause with which we have been familiar or which our law searches can find, i.e., an exclusive license which in letter does not cover the entire monopoly, but which in

spirit does. This is true whether we regard the Jardine patent as broad enough to cover pistons made of other kinds of light metal or light alloy than aluminum or limited specifically to aluminum, since no such pistons except aluminum have ever been made and used commercially under Jardine, and probably never will be within the life of the Jardine patent.

The law points which arise, and such law as is on any of these points, are as follows:

(1) An exclusive licensee to all the fields and to the entire patent monopoly *must* be joined as a party plaintiff.

Waterman v. MacKenzie, 138 U. S. 252.

(2) An exclusive licensee to one of many fields of utility *may* be joined as a party plaintiff.

Radio v. Emerson, 296 Fed. 51 (C. C. A. 2);
Western v. Pacent, 42 Fed. (2) 116, 119 (C. C. A. 2);
Hawkinson v. Carnell, 112 Fed. (2) 396 (C. C. A. 3).

(3) Whether an exclusive licensee to one of many fields of use *must* be joined as a party plaintiff has not been settled so far as we are aware or can find.

(4) Whether an exclusive licensee for the sole field for which the patented device has any practical utility *must* be joined is likewise an open question as far as we are aware or can find.

(5) Whether an exclusive licensee for the sole field to which the patentee dedicates his patent *must* be joined is an open question as far as we are aware or can find.

We find no decisions on points (3), (4) and (5); the authorities cited by petitioners do not deal with such questions. *Daugherty v. Vickers* and *Kaiser v. General* relate to point (1) and *Hawkinson v. Carnell* relates to point (2).

As we understand the opinion of the Court of Appeals, its decision on this point rested on the failure of the peti-

tioner to except to the ruling of the Master against petitioners (108 Fed. (2) 115).

We cannot, however, deny that at the time the question of whether or not the Aluminum Company should be joined as a party plaintiff was before the Master, there were included in the cause at least three patents, i.e., Gulick, Maynard and Schmiedeknecht, not limited to the aluminum piston field, and the terms of whose specifications justified the conclusion that the patentees contemplated the use of their pistons in other field; indeed, it is probable that Schmiedeknecht contemplated no other field than the iron piston field. Therefore, the Master was not presented with the following precise questions, i.e., (1) must there be included as a party plaintiff to a patent infringement suit one who holds the exclusive license for the only field in which the only patent in suit has any utility, and, (2) to which field the patentee, in the only patent in suit, dedicates his invention?

These precise questions were never presented to the Master because the decisions of this Court and the Court of Appeals holding the Gulick, Maynard, Schmiedeknecht and Mooers patents invalid or not infringed, and leaving the Jardine patent alone in the case, have resulted in presenting those questions for the first time. They did not exist in the case before the holding of invalidity or non-infringement of such patents by this Court and the Court of Appeals subsequent to the Master's report.

Under the circumstances the normal procedure might be to remand the cause to the District Court with directions to reopen the cause to try to decide these novel questions, so that this Court, or the Court of Appeals, both of which are reviewing Courts, shall have a trial Court's decision of these precise questions to review. However, since this litigation has been pending for so many years, and has been in this Court and in the Court of Appeals twice, since the questions of fact involved are not in dispute and are undoubtedly complete, and since the sole questions to be considered

are questions of law, the respondent waives whatever right it might have to a remand and a trial on these precise issues, and consents to a review and consideration of these law points (3, 4 and 5) on this record; and we assume that the petitioners take the same view from the manner in which the questions have been brought to this Court.

In *Peters v. Bates*, this Court dismissed certiorari because, pending the suit, the plaintiff had lost any right to the cause of action. If the Court in the instant case should think that, pending this suit, the plaintiff has lost its right to sue alone because when the suit becomes one on the Jardine patent alone, the Aluminum Company is a necessary party,—then the Court may well apply the analogy of the *Peters-Bates* case, and dismiss the certiorari. There would be nothing left before the Court except the One Dollar agreed upon as damages in each case; and we anticipate that the Court will not wish to be required to go extensively into the merit of a Three Dollar case.

The Jardine Invention and the Jardine Patent: The factor that militates against the Jardine invention is its simplicity when viewed by the eye. To the medieval eye it is one with the flatness of the earth and the movement of the sun. It is to the medieval eye that the petitioners have appealed in their castigation of Mr. Jardine's work. If the Jardine invention it to be evaluated, or its status in the patent law to be fixed by the eye of the medival dialectition, then Mr. Jardine is just as well lost and our efforts would be just as futile as if evaluation was to be determined on the basis that his work and that of the Court of Appeals were now regarded as "sins of the past."

Of course, if the solution of the aluminum piston problem and the sustaining of patent protection on the invention that solved that problem now rates as "sins of the past," that is an end of this litigation for, manifestly, we have no case on that basis.

We quote again from Professor Hooton's book, "Twilight of Man," p. 24:

> "The innovator in the field of mechanical science is regarded with suspicion, fear, and hatred, *because his inventions* are misunderstood and because they seem to give him an unfair advantage and to *depreciate* the time-honored methods, inferior tools, and *less ingenuity of the ordinary workers.* These observations are valid in primitive societies and probably held true in civilized nations up *to the last century.* Only within that time have innovations become the rage because of industrialization."

Why "up to the last century"? The reason is that it was just about a century ago that there was first instituted an administration of the patent laws in the United States under which patents were sustained and which continued until recently. Such an administration was subsequently instituted in other European countries, but later relinquished in France and other countries, though continued in Germany. Although there have been patent laws in many other countries during the last century, there has been no industrial progress because there has been no fair administration of those laws. In other countries there has been neither patent law nor administration thereof. In none has there been industrial progress. It can be truly said that the industrial progress of a people during any century can be measured relatively and absolutely by the number of patents sustained in that country.

Previous history is just as unerring as current history in its proof. There was little or no inventing prior to the beginning of the "last century." An invention in a century was a high average.

Earlier peoples recognized the advantages of invention and three definite efforts were made to encourage invention.

The ancient Greek, or Hellenes, lauded the prowess of the inventor as they did the prowess of their athletes and

favor was sought by invention as by skill in the games. Some notable inventions resulted, but not a great deal was accomplished.

Around about the year One Thousand the Saracens or Moors undertook to encourage invention on the patron system, prevalent in England in the time of Dryden and Dr. Johnson, to promote and encourage literature. Considerable was accomplished, but the Crusaders terminated the institution.

Then the early patent laws were passed, but they were so poorly administered that the expense of unsuccessful litigation was added to that of pioneering and inventing; the general result was to make a Roman holiday out of the inventor. Few inventions resulted and there were no repeats after the inventor found that the laws were so administered as to perpetrate a fraud upon him. Inventors will not work for nothing, any more than lawyers or anybody else.

Jardine Operations and Results: To the untutored medieval eye all Jardine did was to split the Ricardo piston; to the modern scientific understanding, Jardine recognized that he would solve the long pressing piston problem if he were to split a piston of the Ricardo type (of all the hundreds of types that were then present), where and how he should split it, so that it would in use "bend," "flex," "deform," "deflect" and "displace" in and among its parts so that it would maintain all up and down and around its walls the same "very small clearance" between the relatively rapidly expanding piston and the relatively slowly expanding iron cylinder wall, so that the piston would neither slap nor seize in the cylinder, all without destroying or interfering with the ruggedness, the durability, and the staunchness of the piston. He did more than produce a piston that would maintain this very "small clearance" all over its wall surface between the unequally

expanding and contracting piston and cylinder wall—a thing that no one else had done before him—but he did so in such a way as to maintain the staunchness, the ruggedness and the durability of the piston. Naturally the splitting of the piston anywhere weakened it, and made it more flexible. The problem was not just to split the piston, but to split it so as to realize the necessary flexibility without injuring the piston. The problem was not only to make the piston more flexible, but to make it so without interfering with its ruggedness or its durability. Jardine met and conquered the anomalies of a flexible piston that was at the same time rugged, a weakened piston that was at the same time staunch, a sectioned piston that was at the same time durable. He not only achieved something that nobody else achieved, i.e., the .002" clearance, established and maintained, but at the same time he preserved all of the other requisites of the piston. To do these things Jardine took the heat that made the piston expand and used it to keep the piston from expanding. He reversed the effects of nature. He used two metals whose different coefficients of thermal expansion would cause them to meet and jam, but he kept them apart. He made them move in and out in coaction when nature had made them to move in and out in conflict. He deformed and displaced the skirt sections; he bent and flexed the webs and he employed the reaction force of the cylinder walls and the effects of heat to accomplish all of these things. He distributed the flexing to prevent its concentration with the well known wire breaking result.

His only mistake was that he made the piston simple to invite the medieval eye to disparage his invention and defeat his rights. It would be fairer to say that it was one invention to accomplish all the things that Jardine did and another invention to make the device simple, in which those things were accomplished, than to say he made no invention at all because his device is simple. Simplicity adds greatly to the merit, to the utility, and to the enrichment of the public of and by any invention. To have done all the things

that Jardine did in a complicated structure would have been a major achievement. To have done it in the simple structure transcends even a major achievement.

In all this ointment petitioners can find but one fly, as if an inventor must make a world in one day to keep a Court from depriving him of that reward, which Congress promised him and the Government has granted him. It is asserted that there will be some oil passing between the slippers in the particular embodiment of the Jardine invention illustrated in his patent. In another embodiment of his invention this was quickly cured, however, as illustrated in the drawing of the Maynard patent and in Exhibit 1 by the simple expedient of continuing the bottom of the skirt throughout the circumference, all of which, according to the petitioners, was nothing more than a mere mechanical expedient. It was, however, one of the merits of the Jardine invention that this could be accomplished without in any way interfering with the many other virtues which Jardine had added to the piston. In other words, he made the piston flexible enough to prevent the sticking and the seizing and at the same time made it possible to prevent the oil pumping.

This praise is not idle. It is supported by the undisputed history of the piston industry, recited in the excerpts from the opinions of the Court of Appeals which we have quoted heretofore in this brief (see pp. 30 to 32). One thing that this history shows, which the Court of Appeals did not comment upon, was the repeated efforts of the sponsor of the defendants to solve the piston problem independently of Jardine and its failure to do so. It is one of the anomalies of petitioners' notion of the proper administration of the patent law under the "sins of the past" doctrine that those who have exhausted their mechanical skill in undertaking to solve a problem and failed, should be permitted to come into Court, after the problem has been solved by someone else, and be heard with approval to say that it required no more than the exercise of mechanical

skill to accomplish what the successful inventor accomplished. It is so in this case. The sponsor of the petitioners who is defending this suit asserts that Jardine exercised no more than mechanical skill, although that sponsor was never able to do what Jardine did or to accomplish what Jardine accomplished by means which differed from the Jardine means (R. pp. 259, 260, 1074, 1077, 1079 and 1080).

Therefore, we say that if one evaluates the Jardine invention through understanding the important nature of his achievement and its high standard, his invention must be appreciated. Even the eye must recognize that an invention of high order was made from the history which the Court of Appeals has recorded and which stands undisputed in the District Court. Such a situation ought not to have to yield to any prejudices about the inadvisability and the sins of those who initiated and fostered the century to which Professor Hooton refers; this situation ought not to have to yield to such considerations as patent pools, or who is or who is not a licensee under the patent. It ought not to yield to technicalities if any exist.

Continuation of the century of industrial progress, referred to by Professor Hooton, and based, as he says, upon mechanical invention, is too important to subject it to the adverse effects of invalidating a patent covering an invention which has the merits and which has made the history of the Jardine invention for such technical reasons as are advanced by the petitioners. Continuation of that industrial progress is much more important than any temporary gain against either piston pools or big corporations that might result from the invalidation of the patent. After all, a patent sustained is an encouragement to the inventor and a promotion of this progress, whereas a patent invalidated is a discouragement to an inventor and a bar to such progress because it penalizes the inventor with unsuccessful litigation in addition to his expense of pioneering and invent-

ing, the very evil which delayed industrial progress for long years between the time the patent laws were first adopted and the time when they were administered in such a way as to sustain patents.

We have studied the nature, the accomplishments, the achievements, and the history of many of the inventions which were made during the century to which Professor Hooton refers and upon which the patents were sustained by this Court. The Jardine patent ranks high in all of these things when compared with these other inventions. True, neither the Jardine invention nor its consequences are as spectacular as some of these others. That is not because the problem was any less difficult, the solution any less startling, or the achievement any less important, but because science and mechanics have progressed to the point where important inventions are not so spectacular in the public eye, largely because they deal with things that a more limited number of people understand. For example, as a result of the solution of the aluminum piston problem, automobiles have come to run easier and faster, to be safer, to give less trouble, to have the life of the engine and other parts prolonged, etc. These things came gradually. Not a great many people knew about them. Many of us must stop and compare present-day automobiles with those of twenty years ago to appreciate that these advances have been made; few of us know how or why. Indeed, few people would realize these things unless they stop to think of the advance made in automobiles between 1920 and 1935, and those who did stop to think about it would not know the contribution made by Jardine's invention, which made the aluminum piston possible.

The Jardine Patent teaches all the required things we have said about the Jardine invention though it condenses what we have said, as it should in addressing the skilled where we must address laymen.

On the effects of deformation and deflection of the parts without interfering with such "essential functions" as durability, ruggedness, etc. Jardine says (R. p. 1295, ll. 21-28):

> "I have found that these difficulties can be overcome by constructing a piston with its skirt or guide portion *supported and slotted or divided in a manner to permit deformation and deflection of parts thereof without interfering with the performance of the essential functions of the respective parts.*"

Here he implies the even then well known truth that not merely slotting or dividing anywhere or anyhow will do, and declares that he slots and divides the piston in such a way as to preserve the essentials of the piston as well as to induce that deformation and deflection under which the minute clearance is realized. As we have said, some of the older pistons sacrificed these "essentials" in endeavoring to establish the minute clearance; others failed to do the latter trying to preserve the former, while still others sacrificed the essentials and never got the minute clearance.

On the question of minute clearance, he says (R. p. 1295, ll. 4-8):

> "The invention has for its chief object the construction of a light alloy piston which, with relatively *small initial clearance,* will operate satisfactorily *at all temperatures* in an engine cylinder."

He states the problem of sticking and scoring and being noisy (slapping) at Record page 1295, lines 8 to 12.

He illustrates two forms of pistons in which his invention may be embodied to "facilitate" "understanding" of his invention. Not just for the eye, but for the "understanding" (R. p. 1295, ll. 29-32).

He then describes the details of these forms in accordance with the requirements (*U. S. v. Societe, supra*).

He expands on the description of the operations based on deformation and displacement, declaring that it is "preferably" permitted by a "bending of the webs" (R. p. 1296, ll. 4-13).

He then explains how "the bending of the webs" in the preferred forms aided by displacement and deformation maintains the small initial clearance even when subjected to a considerable thermal expansion. It is explained thus (R. p. 1296, ll. 25-34):

> "Due to the *bending of the web* sections 6 and the forcing together of each pair of segments, the guide part of the piston may undergo a *considerable thermal expansion* without a corresponding increase in the outer diameter thereof and thus *a small initial clearance* can be used *without danger of scoring or seizure of the piston.*"

How the reaction of the cylinder walls on the piston walls aids the bending of the webs is described in the preceding lines (R. p. 1296, ll. 22-25).

The "bending" and "flexing" in the "cantilever" structure in these preferred embodiments is described (ll. 19-20, 45, 48-50).

Then, beginning in lines 89-115, there is an overall description dealing with these parts and their effects in maintaining this "very small clearance" and the compensation for the "relatively large thermal expansion" of the piston skirt provided by the displacement of the parts thereof resulting from the reaction of the cylinder walls.

We quote it (R. p. 1296, ll. 89-115):

> "From the foregoing description the operation of pistons embodying my improvements will readily be understood. It will be seen that an aluminum alloy piston embodying my invention can be fitted to the engine cylinder with *a very small clearance and that compensation for the relatively large thermal expansion of the guide section of the piston is provided by the displacement of the guide segments* which results from the reaction force of the cylinder wall on the outer faces of the guides. As above indicated the reaction force necessary to displace the guide parts and effect such compensation can readily be controlled by properly forming and proportioning the guide parts. In this connection it will be obvious to

the designer that account must be taken of such factors *as compression pressures, piston diameter and piston stroke as determining the lateral thrust to which the guide parts will be subjected. It is obvious that the compensating displacement of the guide parts should require a thrust great enough to insure adequate mechanical strength of the piston and small enough to obviate scoring of the piston and cylinder or seizure of the piston.*"

Here, then, is a complete, though succinct, scientific explanation of the Jardine invention, its principle of operation, its mode of operation.

Conclusion on Jardine's Invention and Patent: What layman shall say that it was mere mechanical skill to do what the most learned and skillful engineers, inventors and scientists had for years failed to do until Jardine did it?

The Court of Appeals said:

"The present record is conclusive of the long unsuccessful search for a light weight piston sufficiently durable to obviate the well-known disadvantages of the iron trunk piston in high speed engines. *There was much research and experimentation by those most highly skilled, including the engineers of the Aluminum Company, Colonel Vincent of the Packard Motor Car Company, one of the designers of the Liberty engine, and the engineering staff of the Franklin Automobile Company, under the direction of the defendants' expert Stellman, its Chief Engineer.*"

* * * * *

"Ingenious, numerous and varied were the expedients resorted to in an effort to achieve the clearly recognized advantages of aluminum pistons, while at the same time avoiding troublesome results, and equally numerous were the failures, by reason of which a prejudice had developed in the industry against them, and it was said they had had a 'black eye.'"

To the presence of these factors the District Court and the Master agreed.

Petitioners, who themselves failed either to do what Jardine did, or to accomplish his purpose otherwise than by substantial duplication of the very forms in his patent, now ask this Court to assume the position of saying that it was all mechanical skill, and this Court, be its members laymen or not in the pertinent sciences, to declare that it was all easy to anyone.

Could any course fly so squarely into the face of history? Petitioners do not say how it would square with the truth and the facts.

Gulick and Jardine: Unless we read the Gulick webs as flexible on this review in these causes, although rigid on the first review in the same causes, Gulick has no bearing here. Gulick's web piston was never made, used or sold; its only (pre-Jardine) disclosure was in the Gulick patent application and then the webs were rigid (*Gayler v. Wilder*, 51 U. S. 477, 497).

Franquist and Jardine: Franquist has no webs; he operated on the accordion principle, a different principle from Jardine. Franquist did not get the required small clearance; the Franquist form was not practical and was not used; Franquist failed where Jardine succeeded. The patent law is administered on such facts, not what the plaintiff might have done about owning Franquist and relying upon it in previous suits which never went to trial. Such action was never a concession that Franquist was identical with Jardine in any way; nor could any such act change what is the truth; lawsuits are to be decided upon the truth. The plaintiff has brought suit on numerous patents in numerous causes, but this cannot be construed as meaning that these other patents were the same as Jardine.

Petitioners claim no estoppel in their favor because of any previous action, so that even if there were any merit to any of petitioners' claims in the premises, respondents' mouth is not closed to speak the truth about Franquist here

and now. What the Court of Appeals said about Franquist and Gulick applies here in comparing Franquist and Jardine now that this Court has rejected Gulick (see S. P. B., pp. 6 and 7; 92 Fed. (2) 334).

After all, some consideration should be given the rules of law by the complaining parties in a lawsuit; there ought to be a limit to the bad law that should be urged by self-appointed crusaders against patent pools and large corporations, who themselves would like as not join either if opportunity afforded.

Ricardo and Jardine: The comparison is no more than that between a corpse and a living man (*Consolidated v. Crosby,* 141 U. S. 441, 448) since even defendants' expert admitted that the principles are different (R. pp. 553, 554, 563, 574, 586, 587 and 589) and the evidence shows that the workers who failed had Ricardo before them (R. pp. 185-188, 458, 547, 548, 554, 575 and 1081).

Now lay lawyers ask this Court to assume that these men could have readily done what Jardine did—a proposition untrue on the face of this history.

Schmiedeknecht and Jardine: The corpse and live man analogy of this Court applies; Schmiedeknecht differed in structure, mode of operation and results from Jardine. If cut up in the manner now proposed by petitioners in the drawing at the top of page 15 of their brief, it would fall apart because there would be nothing to hold the head and skirt together.

Pomeroy and Jardine: Pomeroy was but an effort and failure to do what Jardine did (R. pp. 185-187 and 545). Pomeroy thought he might shorten his webs to allow for the pressure. His scheme was fantastic. It is a tribute to the Jardine success.

This Court is asked to reverse all this history and say that it had succeeded in solving the problem, when it had not.

Conclusion: We think the certioraries should be dismissed as moot; but if decision is to be on the merits we think history, as well as perhaps necessity, persuade, if they do not command, that invention must be encouraged in this country now as in the Nineteenth Century. We think it unwise to reject a policy under which there was success and readopt one under which there was failure if, as a matter of fact, we have any choice in the matter now.

We think such things as the questions of patent pools should be left to Congress, and the discipline of the Aluminum Company, if such is needed, left to the Courts in the "anti-trust" proceeding now pending against it in the Southern District of New York. We think these things, even if cognizable here, are mere bagatelles to the all important question of what policy in administering the patent law is to be followed—the successful policy of the Nineteenth Century or the failure policy of the Seventeenth and Eighteenth Centuries.

Jardine made an invention, under all the tests made and provided to determine the presence of invention, even those of the recent decisions of this Court; to say that a mechanic could have done what he did flies in the face of the truth.

Jardine's patent complies with all the requirements not only of patents, but of contracts.

We think the Court of Appeals acted wisely and should be affirmed.

Respectfully submitted,

A. C. Denison,

F. O. Richey,

Wm. C. McCoy,

Milton Tibbetts,

Counsel and Solicitors for Respondent.

APPENDIX A.

In the Supreme Court of the United States

OCTOBER TERM, 1940.

THE SCHRIBER-SCHROTH COMPANY,
Petitioner,
vs.
THE CLEVELAND TRUST COMPANY,
CHRYSLER CORPORATION,
Respondents.
No. 9.

THE ABERDEEN MOTOR SUPPLY CO.,
Petitioner,
vs.
THE CLEVELAND TRUST COMPANY,
CHRYSLER CORPORATION,
Respondents.
No. 10.

THE F. E. ROWE SALES CO.,
Petitioner,
vs.
THE CLEVELAND TRUST COMPANY,
CHRYSLER CORPORATION,
Respondents.
No. 11.

AFFIDAVIT OF WILLIAM C. McCOY.

STATE OF OHIO,
COUNTY OF CUYAHOGA, SS.

WILLIAM C. McCOY, being duly sworn, deposes and says:

I am and have since June 29, 1928 been a member of the patent law firm of Evans & McCoy of Cleveland, Ohio. I have since May 15, 1928 represented the Plaintiff, The

Cleveland Trust Company, with respect to the patents involved in this suit. During those years I have kept in close contact with the commercial work on aluminum pistons, familiarizing myself with the commercially important types and generally with the relative quantities of the different commercially important types of aluminum pistons which have been manufactured and used in the United States for original installation and for replacements, with the makers thereof and with the locations in which they are made.

By original installation I mean pistons which are placed in new engines made by automobile and engine manufacturers. By replacements I mean pistons which have been made, sold and used to replace other pistons for various reasons.

The piston of the type known as Exhibit 1 in this cause, either in the exact form shown at page 15 of petitioners' brief, or in slight modification, such as entitled "Maynard" on the same page, was used in large quantities both for original installation and replacement purposes beginning in the early part of the last decade. Its use exceeded One Hundred Million (100,000,000) pistons. Within the last five years this type of piston has gradually been supplanted by pistons of other types and largely by pistons of one or more of the types held not to infringe by the Court of Appeals in its last decision (108 Fed. (2) 109) until now I am told that no Exhibit 1 types are being manufactured for original installations. These pistons found not to infringe include Exhibits 8, 9, BBB, CCC, 3-J and 3-O; pistons of the type 3-O have more than any of the others supplanted Exhibit 1.

I have made an investigation of the present status of Exhibit 1 in the aluminum piston field and am informed through reliable sources and am convinced myself that at the present time no manufacturer of automobiles or trucks or of internal combustion engines, or anyone else, is em-

ploying Exhibit 1 pistons in original installations; a few of these pistons Exhibit 1 are being made for replacement purposes only; the quantity made and used is diminishing rapidly as the cars in which they were originally installed are being junked. The general opinion of those whom I have consulted, and in which opinion I concur, is that it will not be very long before they will not be made and sold at all except, of course, in relatively negligible quantities to the few people who continue to use old relic automobiles; I am informed and believe that none of these Exhibit 1 pistons are now being manufactured in the Sixth Circuit by the licensees of the plaintiff or others, except a few scattered numbers for replacement purposes; our reports are that outside of the Sixth Circuit a few are being manufactured to supply this diminishing replacement demand on the Pacific Coast and elsewhere; otherwise, according to my information and belief, none are being manufactured and sold at the present time and those being made and sold, as I say, are diminishing and will, in my opinion, terminate in the near future.

William R. McCoy.

Subscribed and sworn to before me this 30th day of September, 1940.

.....

Notary Public.

Commission Expires July 12, 1943.

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